REPORT RESUMES

ED 013 718 RE 000 324

EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY.

BY- BERGER, ALLEN
SYRACUSE UNIV., N.Y.
REPORT NUMBER BR-6-8187 PUB DATE 66
CONTRACT OEC-1-6-068187-0845
EDRS PRICE MF-$1.00 HC-$9.24 231P.

DESCRIPTORS- *READING RESEARCH, *READING SPEED, *COLLEGE STUDENTS, *READING COMPREHENSION, READING ACHIEVEMENT, READING PROGRAMS, READING SKILLS, READING IMPROVEMENT, READING INSTRUCTION, TEACHING MACHINES, MECHANICAL TEACHING AIDS, RETENTION STUDIES, SYRACUSE UNIVERSITY,

THE EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY WAS STUDIED. TWO HUNDRED FIFTY-FIVE FRESHMEN AT SYRACUSE UNIVERSITY SERVED AS SUBJECTS. TWENTY-FIVE LESSONS WERE GIVEN OVER A 6-WEEK PERIOD. SUBJECTS WERE TESTED IMMEDIATELY FOLLOWING COMPLETION OF THE LESSONS AND AGAIN AFTER 8 WEEKS. THE METHODS OF TEACHING WERE THE TACHISTOSCOPE, THE CONTROLLED READER, CONTROLLED PACING, AND PAPERBACK SCANNING. THREE INSTRUMENTS WERE USED TO TEST 13 HYPOTHESES. ANALYSIS OF COVARIANCE, T TESTS, AND CORRELATIONS WERE USED TO ANALYZE THE DATA. GAINS WERE SUPERIOR FOR RATE IN THE PAPERBACK SCANNING GROUP. THERE WAS NO CHANGE IN THE LEVEL OF COMPREHENSION. FLEXIBILITY INCREASED AS A RESULT OF ALL THE METHODS EXCEPT THE TACHISTOSCOPE METHOD. GAINS SEEMED TO HAVE BEEN RETAINED AFTER 8 WEEKS. FURTHER RESULTS, CONCLUSIONS, TABLES, APPENDIXES, AND A BIBLIOGRAPHY ARE INCLUDED. (BK)

RE 000 32~~3~~4

SEP 7 1967

JUL 11 1966

ED013718

EFFECTIVENESS OF FOUR METHODS OF INCREASING
READING RATE, COMPREHENSION,
AND FLEXIBILITY

BR-6-8187
PA 24

Cooperative Research Project No. OEC-1-6-068187-0845

by
Allen Berger
Syracuse University
Syracuse, New York

1966

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY

Cooperative Research Project No. OEC-1-6-068187-0845

by

Allen Berger

Syracuse University

Syracuse, New York

1966

The research reported herein was supported by
the Cooperative Research Program of the
Office of Education, U.S. Department of
Health, Education, and Welfare.

EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY

by

ALLEN BERGER

B. A., Utica College of Syracuse University, 1957
M. A., New York State College for Teachers at Albany, 1960

ABSTRACT OF DISSERTATION

Submitted in partial fulfillment of the requirements for
the degree of Doctor of Education in Reading in the
Graduate Division of the School of Education
at Syracuse University,
June, 1966

Approved___________________________

Date___________________________

Purposes

This study was designed to determine the 1) effectiveness of four methods of increasing reading rate, comprehension, and flexibility, 2) retention of gains after a period following completion of instruction, 3) effect of an increase in reading rate on the reading of textbook-like materials, 4) differences in gains of reading rate, comprehension, and flexibility, 5) retention of differences in gains in reading rate, comprehension, and flexibility, and 6) whether increase in reading rate through a specific method will result in an increased rate of reading both short and long passages. The four methods used are referred to as tachistoscope, controlled reader, controlled pacing, and paperback scanning.

Procedures

This study, which extended over a period of one semester, included 25 sessions, 17 of which were training sessions extending over a six-week period. Eight weeks after completion of the training sessions, retention of gains was tested. Three instruments were used to obtain data to test 13 hypotheses.

The population sample involved 255 students from the Improvement of Learning course and the Freshman English course at Syracuse University. Instructors were graduate assistants in the Reading Center and the English Department. The four treatment methods used by the instructors were randomly assigned.

Thirty minutes of each of the seventeen 50-minute training sessions involved the practice of the method to increase reading effectiveness. During the remaining approximate 20 minutes, students read paperback books with the encouragement to apply their newly acquired skills. Once a week during the time normally allotted for transfer reading a quiz was given on specified chapters in a vocabulary textbook. To insure similarity of instruction, lesson plans were prepared for the instructors of all treatment methods. Students in the control group received instruction in Freshman English.

The design used for this investigation was the Non-Equivalent Control Group Design. The major statistical method was the analysis of covariance, with attention given to the variables of verbal and math aptitude and sex. Other statistics used included the t-test and the product-moment correlation coefficient. Criterion measures were the Van Wagenen Rate of Comprehension Test, the Robinson-Hall Reading Test of History, and the Braam-Sheldon Flexibility of Reading Test.

Results

All methods produced significant gains in reading rate, at the .01 level of confidence, with the results of the paperback scanning method being significantly superior to the results of any of the other methods (e.g., controlled pacing, controlled reader, and tachistoscope). This finding appeared on measuring instruments composed of 30-word passages and a 3,000-word passage.

While increased reading rate appeared through all methods, there was no significant change in the average level of comprehension during the six weeks of instruction.

When the investigator tested the retention of gains in reading rate eight weeks after completion of instruction, he found that no significant change had occurred since the end of instruction. Students appeared to have maintained their newly acquired gains in reading rate.

In determining the effects of increased reading rate on flexibility, the findings indicated that, at the .01 level of confidence, reading flexibility increased through all methods except the tachistoscope. Of the three methods producing significant increases in flexibility, there were no significant differences in the results.

EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY

by

ALLEN BERGER

B. A., Utica College of Syracuse University, 1957
M. A., New York State College for Teachers at Albany, 1960

DISSERTATION

Submitted in partial fulfillment of the requirements for
the degree of Doctor of Education in Reading in the
Graduate Division of the School of Education
at Syracuse University,
June, 1966

Approved__________________________

Date__________________________

Dedication

To

My

Parents

ACKNOWLEDGMENTS

No project of this magnitude could have been undertaken without the cooperation of many people. With great pleasure, I acknowledge my appreciation to these people:

Dr. Leonard S. Braam, director, Improvement of Learning, who served as committee chairman and who gave steady guidance and direction to the investigation from its inception to its completion;

Dr. Margaret J. Early, associate director, Reading Center, who as a committee member gave unstintingly of her time and suggestions;

Dr. David A. Payne, assistant professor, who as a committee member also gave much time and guidance in the statistical procedures and the preparation of the manuscript;

Dr. James H. Elson, chairman, English Department and Dr. Randall E. Brune, director, Freshman English, for their cooperation;

Mr. George Barringer and Mr. Rodger L. Fink, instructors in Freshman English.

In addition, I acknowledge my appreciation for the help and cooperation given by the five Improvement of Learning instructors, Mr. Donald J. Bissett, Mr. Robert J. Christina, Mr. Peter Hasselriis, Mr. Howard M. Hines, and Mrs. Suzanne D. Schloss;

Mr. Robert B. Fletcher, who gave guidance in the use of the university's computing system;

Mr. Gaspar Cisneros Barnette, president, Learning through Seeing, Inc., and Mrs. Barnette for providing equipment and suggestions;

Mr. Stanford Taylor, president, Educational Developmental Laboratories, and Mr. Rud Clarke, area representative, for suggestions in the use of their equipment.

During various phases of this investigation, help was also given by Mr. Julius V. Becza, Mr. E. Coston Frederick, Dr. Frank Greene, Mr. Donald Lashinger, Dr. Robert E. Leibert, Dr. George G. Stern, Mr. Gary P. La Breche, Mr. James Powers, Mrs. Grace M. Anderson, Miss Edween Ham, Mrs. Betty Moore, Mrs. Jean B. Gilman, Mrs. Shirley Savlov and Mrs. Fran Coughlin.

Acknowledgment of my appreciation is also made to Dr. William D. Sheldon, director, Reading Center, whose suggestions contributed to the shaping of the investigation.

I acknowledge my appreciation to my wife, Barbara, who contributed patience and help in collating a portion of the data.

To all these people, and to the many students who participated in the investigation, I am deeply grateful.

The research reported herein was performed pursuant to a contract with the United States Department of Health, Education, and Welfare, Office of Education. This work was also supported in part by the National Science Foundation under Grant GP-1137.

CONTENTS

Page

ACKNOWLEDGMENTS ii

LIST OF TABLES vii

Chapter

I. INTRODUCTION AND STATEMENT OF THE PROBLEM . . 1

Introduction 1
Statement of the Problem 7
Definitions 9
Summary 9

II. REVIEW OF THE LITERATURE 11

Chronological Review 12
Tachistoscope and Controlled Pacing . . . 16
Paperback Scanning 22
Retention of Gains 26
Flexibility 28
Summary 32

III. EXPERIMENTAL DESIGN 34

Pilot Study 34

Recommendations 37

Major Investigation 38

Population 38
Procedures 41
Methods 43
Measuring Instruments 49
General Design 54
Statistical Analyses 55

Summary 55

IV. RESULTS--TESTING OF HYPOTHESES 57

H_1--Gains in Rate 59
H_2--Gains in Comprehension 59

Chapter Page

H_3--Gains in Flexibility 59
H_4--Retention of Gains in Rate 60
H_5--Retention of Gains in Comprehension 60
H_6--Retention of Gains in Flexibility 62
H_7--Differences in Gains in Rate 62
H_8--Differences in Gains in Comprehension 67
H_9--Differences in Gains in Flexibility 67
H_{10}-Retention of Differences in Gains in Rate 68
H_{11}-Retention of Differences in Gains in Comprehension 69
H_{12}-Retention of Differences in Gains in Flexibility 70
H_{13}-Reading Rate on Short and Long Passages 70
Summary 70

V. DISCUSSION AND IMPLICATIONS AND RECOMMENDATIONS 73

Limitations 74
Conclusions 75
Implications for Educational Practices 83
Recommendations for Further Research 85

APPENDICES

A. LIST OF MATERIALS USED IN THE INVESTIGATION 88

B. LESSON PLANS 90

C. QUIZZES BASED ON PASSAGES IN PAPERBACKS 125

D. MEASURING INSTRUMENTS 139

E. INTERCORRELATIONS AMONG DEPENDENT AND INDEPENDENT VARIABLES IN THE INVESTIGATION 169

F. RELIABILITY OF THE BRAAM-SHELDON FLEXIBILITY OF READING TEST 171

G. RELIABILITY OF THE ROBINSON-HALL READING TEST OF HISTORY

BIBLIOGRAPHY 177

BIOGRAPHICAL DATA

LIST OF TABLES

Table — Page

1. Analysis of Covariance of Gains in Reading Rate on the _Van Wagenen Rate of Comprehension Test_ (Pilot Study) 35
2. Correlated _t_-tests for Pairs of Means following Analysis of Covariance on the _Van Wagenen Rate of Comprehension Test_ (Pilot) 36
3. Descriptive Statistics of Population Sample. . 39
4. Mean Scores in Words Per Minute on Two Pre-Tests. 40
5. Related _t_-tests for Pre and Post Mean Scores in Rate, Comprehension, and Flexibility. . . . 58
6. Related _t_-tests for Post and Post-Post Mean Scores in Rate and Flexibility 61
7. Analysis of Covariance of Gains in Reading Rate on the _Van Wagenen Rate of Comprehension Test_ 63
8. Correlated _t_-tests for Pairs of Means following Analysis of Covariance on the _Van Wagenen Rate of Comprehension Test_ 64
9. Analysis of Covariance of Gains in Reading Rate on the _Robinson-Hall Reading Test of History_ . 65
10. Correlated _t_-tests for Pairs of Means following Analysis of Covariance on the _Robinson-Hall Reading Test of History_. 66

Table Page

11. Analysis of Covariance of Gains in Reading Flexibility on the _Braam-Sheldon Flexibility of Reading Test_. 68

12. Analysis of Covariance of Retention Gains in Reading Rate on the _Van Wagenen Rate of Comprehension Test_ 69

13. Intercorrelations Among Dependent and Independent Variables in the Investigation . . 170

14. Product-Moment Correlation Coefficients for Rate on _Braam-Sheldon Flexibility of Reading Test_ 173

15. Product-Moment Correlation Coefficients for Comprehension on _Braam-Sheldon Flexibility of Reading Test_ 174

CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

The need to increase reading rate may be discerned not only by popular interest in such programs but also from observations made by various educators. In his third and fourth editions of How to Increase Reading Ability, Harris writes:

> In today's living there is so much to read that the ability to read quickly has become an important asset. The typical reader of a century ago, whose library may have consisted of the Bible, an almanac, and two or three treasured books read over and over again, had no need for speed. A literate adult in today's hectic world goes through more reading material in a week than his great-grandfather probably covered in a year. The college student who has to take six hours for what his instructor considers a three-hour assignment, the business executive who wishes he could get through his reports and mail in two hours instead of three or four, the physician who can't keep up with his professional journals--these are typical of the people who have made "speed reading" courses popular. (Underlining added)[1]

Continuing, Harris observes that for many students "an increase in rate may, in subjects requiring extensive reading, mean the difference between a C and an A grade; in the student's total program, it may mean the difference between being just able to meet study requirements, and having time for leisure."[1]

---

[1] Albert J. Harris, "Improving Rate of Reading," How to Increase Reading Ability (4th ed.; New York: David McKay Company, Inc., 1961), p. 503.

At the Forty-fourth Annual Education Conference at the University of Delaware, the topic explored was Speed Reading: Practices and Procedures. At this conference, Captain John C. M. Des Islets of the United States Air Force Academy discussed the Academy's reading improvement program, stating that "better than average reading ability has become a necessity rather than a luxury for our students."[2] Stauffer, director of the University of Delaware's Reading-Study Center, which sponsored the conference, cited the so-called "information explosion" and the need for students to cope with ever-increasing amounts of information.[3]

Such statements contain the assumption that reading rate may be increased. This assumption is substantiated by reading specialists and is reflected in titles of books like Teaching Faster Reading[1] and Faster Reading Made Easy.[2] The assumption is supported by statements made by Pauk,[3] Spache and Berg,[4] Harris[5] and others. Pauk has noted that most students can double their reading speed to 500 words a minute with no loss in comprehension. In Faster Reading for Business, Spache and Berg make similar observations. And Harris has found "abundant evidence that the typical high school or college student can increase his rate of reading by 25 to 50 per cent without any decline in accuracy of comprehension. The very slow reader can sometimes achieve an increase of 50 to 100 per cent in rate in a comparatively short time."

---

[1] Ibid., p. 504.

[2] Captain John C. M. Des Islets, "An Investigation of the Use of Accelerated Reading Skills at the USAF Academy, Fall 1961-1962," Speed Reading: Practices and Procedures, Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware, Vol. X, ed. Russell G. Stauffer, University of Delaware Press, 1963, p. 20.

[3] Ibid., passim.

Attention must be directed not only to the problem of reading rate improvement but also to the related problem of improvement of reading flexibility. For as Braam and Sheldon have noted:

---

[1] Edward Fry, Teaching Faster Reading (Cambridge: University Press, 1963).

[2] Nila Banton Smith, Faster Reading Made Easy (New York: Popular Library, 1963).

[3] Walter Pauk, "Speed Reading?" Journal of the Reading Specialist, IV, No. 2 (December, 1964), 18.

[4] George G. Spache and Paul C. Berg, "So You Think You Can Read Well?" Faster Reading for Business (New York: Thomas Y. Crowell Company, 1958), pp. 4-5.

[5] Harris, op. cit., pp. 503-504.

> It is not enough for one merely to read faster. Increase in speed alone can result in less efficient reading due to a loss in comprehension. An efficient style of reading requires flexibility, that is, the ability to shift from a high to a low rate of reading according to the purpose for which reading is to be done.[1]

For the purpose of improving reading effectiveness, Spache has pointed out that "there are twenty to thirty commercial devices to mechanize the act of reading in some fashion or other."[2] These devices, designed for individual and group use, fall into three categories: tachistoscopic, controlled reader, and shutter-type equipment. In addition, there are other programs designed to increase reading speed which make no use of mechanical devices. One such program makes the claim that

> many learners have increased their skill and ability to the extent that they read ordinary material with complete comprehension at from 5,000 to 15,000 words per minute and devour study material at 2,500 to 5,000 words per minute with satisfactory comprehension and complete retention of the material read or studied.[3]

---

[1] Leonard S. Braam and William D. Sheldon, "Becoming an Efficient Reader," Developing Efficient Reading (New York: Oxford University Press, 1959), p. 29.

[2] George G. Spache, "Flexibility in Reading," Speed Reading: Practices and Procedures, Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware, Vol. X, ed. Russell G. Stauffer, University of Delaware Press, 1963, p. 29.

[3] Ibid., p. 32.

The studies that have attempted to evaluate the results or effectiveness of these reading improvement methods have fallen short. Bliesmer has cited "many weaknesses in the investigations"; specifically, he points out that

> some type of standardized reading test was used, at least in part, for measuring gains or effectiveness in a majority of reported programs; but various non-standardized tests were also used in some. Statistical analyses of results were not employed in a majority of the reported studies (or at least the use of such was not clearly indicated in a majority of the reports). . . . Definite indication of use of control groups in statistical analyses employed was indicated for only a few programs. In studies in which gains in reading skill areas were definitely given statistical tests or treatment, gains in reading speed or rate but not in comprehension were reported for only a very few programs.[1]

Davis[2] has cited other weaknesses; he reports that purpose for reading is rarely held constant and observes that the mere request to read faster will result in a 40 to 80 per cent increase in reading rate. In addition, he notes that even though a pre and post standardized test may have been administered, contamination may result if a method being investigated contains material or instructional purposes similar to those contained in the testing material.

---

[1] Emery P. Bliesmer, "1964 Review of Research in College-Adult Reading," _The Philosophical and Sociological Bases of Reading_, Fourteenth Yearbook of the National Reading Conference, ed. Eric L. Thurston and Lawrence E. Hafner (Milwaukee: The National Reading Conference, Inc., 1965), p. 238.

[2] Frederick B. Davis, "Measurement of Improvement in Reading Skill Courses," _Problems, Programs and Projects in College-Adult Reading_, Eleventh Yearbook of the National Reading Conference, ed. Emery P. Bliesmer and Ralph C. Staiger (Milwaukee: The National Reading Conference, Inc., 1962), pp. 30-40.

Clearly, then, the need exists for a carefully-designed and controlled investigation of various methods to improve reading effectiveness. This investigation is designed to determine the effectiveness of methods to increase reading rate, comprehension, and flexibility, with a major purpose being the determination of gains made and the retention of these gains. The investigation is also designed to determine differences in gains and the retention of these differences.

During the first semester of the 1964-65 school year, the writer investigated the research on improvement of reading rate and designed a pilot study, which was conducted during the second semester of that year. Based upon the findings of the pilot study, another investigation, larger in scope and more precise in experimental design, was conducted during the first semester of the 1965-66 school year at Syracuse University.

Statement of the Problem

In this study, the following hypotheses were tested:

1. No gains in reading rate will result from any of four different methods[1] of instruction.
2. No gains in reading comprehension will result from any of four different methods of instruction.
3. No gains in reading flexibility will result from any of four different methods of instruction.
4. There will be no retention of gains in reading rate resulting from any of four different methods of instruction.
5. There will be no retention of gains in reading comprehension resulting from any of four different methods of instruction.
6. There will be no retention of reading flexibility resulting from any of four different methods of instruction.
7. There will be no differences in gains in reading rate resulting from different methods of instruction.

---

[1] The methods are referred to as tachistoscopic, controlled reader, controlled pacer, and paperback scanning. Description of each method will be found on pages 43-48.

8. There will be no differences in gains in reading comprehension resulting from different methods of instruction.

9. There will be no differences in gains in reading flexibility resulting from different methods of instruction.

10. There will be no differences in retention of gains in reading rate resulting from different methods of instruction.

11. There will be no differences in retention of gains in reading comprehension resulting from different methods of instruction.

12. There will be no differences in retention of gains in reading flexibility resulting from different methods of instruction.

13. Different methods of instruction will result in no differences in the rates with which short and long passages are read.

In addition, analyses were made of the effect of the variables of aptitude and sex. Studies that have attempted to determine the effect of sex on reading effectiveness have produced conflicting results; hence its consideration as a variable in this investigation.

Definitions

The following terms are used in this investigation:

1. Improvement of Learning Course--a one-semester, two-credit hour, reading-study skills course composed of 12 sections, each meeting for a total of 150 minutes a week. Instruction in this course focuses upon improvement of reading rate, comprehension, vocabulary, and study skills.
2. Gain in Reading Rate--the score determined by the difference in the number of words covered on the pre and post tests.
3. Gain in Reading Comprehension--the difference between the percentage attained on the pre and post tests.
4. Reading Flexibility--the difference in words per minute between the slowest reading rate and the fastest reading rate attained on the five passages comprising the Braam-Sheldon Flexibility of Reading Test.[1]
5. Gain in Reading Flexibility--the difference in reading flexibility on the pre and post tests.
6. Textbook-like Materials--based on passages comprising the Braam-Sheldon Flexibility of Reading Test.

Summary

Although educators agree upon the value of improving reading skills, research has not provided clear-cut evidence to indicate the effectiveness of methods designed to develop these skills.

---

[1] Leonard S. Braam and William D. Sheldon, Developing Efficient Reading (New York: Oxford University Press, 1959).

Based upon the findings of a pilot study, this investigation was designed to determine 1) the effectiveness of four methods of increasing reading rate, comprehension, and flexibility, 2) retention of gains after a period following completion of instruction, 3) differences in gains in rate, comprehension, and flexibility, 4) retention of these differences, 5) effect of increase in reading rate on the reading of textbook-like materials, and 6) whether increase in reading rate through a specific method will result in an increased rate of reading both short and long passages.

The four methods used in this investigation are referred to as 1) tachistoscope, 2) controlled reader, 3) controlled pacing, and 4) paperback scanning.

Following the present introductory chapter, Chapter II will review the literature related to the facets of reading improvement investigated. A description of the population and procedures involved in the investigation will be presented in Chapter III. The results of the investigation will be presented in Chapter IV. The final chapter will contain a discussion of the results and recommendations and implications for further research and educational practices.

CHAPTER II

REVIEW OF THE LITERATURE

In this review of the literature, the following questions represent areas particularly pertinent to this investigation:

1. What is known about the effectiveness of tachistoscopic and controlled pacing devices in increasing reading rate?
2. What is known about the effectiveness of paperback scanning in increasing rate?
3. What is known about the retention of gains in reading improvement after completion of a reading improvement program?
4. What is known about the improvement of reading flexibility?

To allow the reader a chronological overview, the writer has compiled a chart of studies that have dealt with one or more of the above questions. Using the suggestions of Bliesmer[1] and Davis[2] as guidelines, as well

---

[1] Bliesmer, _op_. _cit_.

[2] Davis, _op_. _cit_.

CHRONOLOGICAL REVIEW OF SELECTED STUDIES

Study	Publication Date	Population	Number	Methods	Measurement	Results
Robinson	1934	college freshmen	not given	separating sentences into phrases	4 tests but not identified	rate increased 55% comprehension, 5%
Taylor	1937	high school students	50	metron-o-scope mimeographed sheets	not identified	no difference in
Robinson & Hall	1941	college freshmen	205		Robinson-Hall Reading Tests	good readers adjust rates to material
Cason	1943	3rd graders	51	metron-o-scope book exercises free reading	Otis IQ Test Gates Reading Survey Informal Tests	no difference between free reading and metron-o-scope groups.
Stroud	1945	4th-6th graders	570	tachistoscope	Chapman-Cook Speed of Reading Test	.50 correlation between rate of reading and perception
Sutherland	1946	college freshmen	240	tachistoscope controlled pacer Harvard Films reading manual	Minnesota Speed of Reading Test Blommers Rate of Comprehension Test, Stroud Rate of Perception Test Unstandardized Tests	increase in recognition span may increase reading rate
Westover	1946	college freshmen	140	controlled pacing book exercises	Cooperative English Test Traxler High School Reading Test	6 months later gains in rate, comprehension and vocabulary retained; no difference between controlled pacing and book groups; both over control

Study	Publication Date	Population	Number	Methods	Measurement	Results
Glock	1949	college freshmen		Harvard films reproduction of film matematerial onto paper	Blommers Rate of Reading Test Traxler High School Reading Test Iowa Silent Reading Test	no significant difference between methods in rate increase
Staton	1950	Air Force officers	12	USAR Reading Improvement Lab Course	not given	rate declined but not to starting point
Manolakes	1952	Marine officers	34	reading rate controller tachistoscope	Silent Reading Check	group without tachistoscopic training did significantly better
Holmes	1953	oil company executives	15	tachistoscope Harvard Films	Van Wagenen Speed of Comprehension Test, Minnesota Speed of Reading Test	gain averaged 166 words a minute
Barry & Smith	1954	9th graders	2,166	Iowa Reading Films	Nelson Reading Test	all methods increased reading ability but 3½ months after instruction ended reading levels dropped to "normal or less"
Wedeen	1954	college	150	Reading Rate Controller Books	Psychological Exam Cooperative English Test Iowa Silent Reading Test	E groups made gains in rate and flexibility over control
Wooster	1954	college students	60	Reading Rate Controller	Robinson-Hall Reading Test of History	no difference between groups using and not using controller

Study	Publication Date	Population	Number	Methods	Measurement	Results
Cosper & Kephart	1955	college students	412	tachistoscope films accelerators essays	Diagnostic Reading Tests	58 retested 14 months after instruction ended and found 60% of rate increase retained
Letson	1956	college freshmen	601			
Jones	1956	auto company executives	56	tachistoscope accelerator Harvard Films	Diagnostic Reading Tests	all groups increased rate but no difference except over control; no loss 8 months later
Thompson	1956	Air Force officers	438	Reading Rate Controller Book exercises	Harvard Reading Course Test	rate increased; flexibility decreased
Buswell	1957	"upper division college students	378	tachistoscope controlled pacing	Van Wagenen Rate of Comprehension Test, Psychological Exam	.06 correlation between rate and tachistoscopic exposure and .63 between rate and span of perception while reading
Karlin	1958	review of studies using machines		tachistoscope controlled pacing		11 of 12 studies which compare machine versus non-machine show equal or better results with no machine
Gilbert	1959	college juniors, seniors and graduates	64	tachistoscope	Test made from radio broadcast scripts	$\frac{1}{4}$ second exposure time needed to avoid interference with extraneous material

Study	Publication Date	Population	Number	Methods	Measurement	Results
Irvine	1959	college students	99	tachistoscope book material	Army General Classification Test, Iowa Silent Reading Test Cooperative English Test	no difference between methods but all resulted in improvement
Poulton	1961	review of adult courses of reading improvement in England		Harvard Films primarily	First two and last two films primarily	rate increased from 11% to 148%
Liddle	1965	college students	50	paperback scanning	Unstandardized Tests	rate rose significantly and comprehension dropped significantly
Nikas	1965	college upperclassmen	36	perceptoscope	Nelson-Denny Reading Test	no difference between teacher-oriented and machine-oriented methods

as the "checklist of methodological questions" offered by Thorndike,[1] selection of the superior studies has been made to present in this review. Even these studies, however, have weaknesses sufficient to make one cautious in interpreting the results. The major weaknesses include lack of a pilot study and lack of adequate control groups.

Tachistoscope and Controlled Pacing

Initially, the writer had intended to begin his review with studies dealing with the tachistoscope to be followed by another area containing studies dealing with controlled pacing devices. However, most studies report the use of a combined methods approach; consequently, the decision was made to present studies relating to these two methods within the same area. The problem of ascertaining how much each method contributed to the results is, of course, a weakness of these investigations. Holmes,[2] for example, using the tachistoscope and the

---

[1] Questions proposed by Thorndike include the following: "1. Have I an appropriate procedure for determining expected achievement? 2. Do I have a criterion measure of achievement that has the same meaning for all cases? 3. Am I aware of the effects of errors of measurement on my study? 4. Can I describe my experimental treatment adequately? 5. Have I an adequate control group or control groups to be compared with the group given the experimental treatment or treatments?" For a more complete discussion, see Robert L. Thorndike, "Check-List and Conclusion," The Concepts of Over- and Under-achievement (New York: Teachers College, Columbia University, 1963), pp. 65-67.

[2] Jack A. Holmes, "Gifted Adults Can Learn to Read Faster," California Journal of Educational Research, IV (1953), 103-10.

Harvard Reading Films, reported group mean increases from 198 words a minute to 358 words a minute, but no indication was given as to the effect of the tachistoscope and the effect of the films.

Manolakes[1] also did not control for methods in his study involving 34 officers at the Marine Corps Supply Schools. Two groups used the tachistoscope while one of the groups received additional training with the reading rate controller. "No significant differences between the groups in the number of fixations, the increase of the span of recognition, the reduction of regressive movements, or the reduction of the duration of the fixation." However, there was a significant difference in reading rate favoring the group using both methods, although the effect of each method was not controlled.

Gowan and Scheibel[2] gave instruction to high school honor students for six weeks "with emphasis on speed, consisting of lectures, reading materials, individual help, drill, tests, and the use of the tachistoscope and slides." Reading rate was doubled for most students but, like the preceding two studies, the contribution of each factor toward the increase is not clear.

---

[1] George Manolakes, "The Effects of Tachistoscopic Training in an Adult Reading Program," Journal of Applied Psychology, XXXVI, No 6 (December, 1952), 410-12.

[2] J. C. Gowan and R. W. Scheibel, "The Improvement of Reading in Gifted Children," Educational Administration and Supervision, XLVI (1960), 35-40.

Two studies which controlled the effects of methods have yielded conflicting results. Sutherland[1] divided 115 freshmen at the State University of Iowa into three groups, one of which received tachistoscopic training, the second training with the Harvard Films, and the third serving as a control group. Results were "inconclusive" but seemed to suggest that "the group that had previous training in perceptual span made faster initial progress in improvement in rate than a comparable group that had not had training in perceptual span."

Weber,[2] however, also dividing his population into three groups, one using the tachistoscope, the second textbooks, and the third serving as a control, found no significant difference in speed or comprehension between the two experimental groups, although both groups made significant gains over the control group.

---

[1] Jean Sutherland, "The Relationship between Perceptual Span and Rate of Reading," *Journal of Educational Psychology*, XXXVII (September, 1946), 373-80.

[2] Christian O. Weber, "The Acquisition and Retention of Reading Skills by College Freshmen," *Journal of Educational Psychology*, XXX (September, 1939), 453-60.

Conflicting results also mark the studies of the relationship between tachistoscopic training and reading rate. Gilbert[1] found a "substantial correlation between the length of the fixation pauses students use in reading simple prose material and the speed with which the students can process tachistoscopically-presented stimuli resulting from simple phrases." However, Buswell[2] found only a .06 correlation between reading rate and a perceptual test involving the tachistoscope.

Like the relatively few studies that have attempted to control the effects of the tachistoscope, the studies that have attempted to determine the effects of controlled pacing devices have yielded conflicting results. In separate studies, Taylor[3] and Wedeen[4] have reported rate increases with controlled pacing devices. However, the population samples using these devices in the studies of Thompson,[1] Barry and Smith[2] did more poorly than groups using other methods. No significant difference in results from different methods was the conclusion reached in the investigations of Cason[3] and Glock.[4]

---

[1] Luther C. Gilbert, "Speed of Processing Visual Stimuli and its Relation to Reading," Journal of Educational Psychology, LV (1959), 8-14.

[2] Guy T. Buswell, "The Relationship between Perceptual and Intellectual Process in Reading," California Journal of Educational Research, VII-VIII (1956-57), 99-103.

[3] Earl A. Taylor, Controlled Reading (Chicago: The University of Chicago Press, 1937).

[4] Shirley Ullman Wedeen, "Mechanical Versus Non-Mechanical Reading Techniques for College Freshmen, School and Society, LXXIX (1954), 121-23.

In a review of tachistoscopic and controlled pacing devices, Spache notes that while these devices achieve their claim of increasing reading rate, "the goals are not achieved for the reasons we are given." Continuing, he said:

> Eye movement camera studies, the only scientific and objective method of measuring mechanical changes in the individual's pattern of reading, show us what really happens as a result of these two types of training. These particular training programs tend to sharpen the reader's perception of recognition of words thus reducing the duration of the fixation. At the same time, they slightly reduce the reader's tendency to regressions, perhaps eliminating one or two regressions per hundred words, and reduce the number of fixations per 100 words perhaps by as much as 10-15 per cent. Each fixation in reading meaningful

---

[1] Lt. Col. Warren Craig Thompson, "A Book-Centered Course Versus a Machine-Centered Course in Adult Reading Improvement," Journal of Educational Research, XLIX (February, 1956), 437-45.

[2] Robert B. Barry and Paul E. Smith, "An Experiment in Ninth-Grade Reading Improvement," Journal of Educational Psychology, XLV, No. 7 (1954), 407-14.

[3] C. B. Cason, Mechanical Methods for Increasing the Speed of Reading, Teachers College Contributions to Education No. 878, 1943, pp. ix-80.

[4] M. D. Glock, "The Effect Upon Eye-Movements and Reading Rate at the College Level of Three Methods of Training," Journal of Educational Psychology, XL (1949), 93-106.

> material requires an average of about . . . a quarter of a second, and the normal reader may make as many as 100-150 fixations per hundred words. Therefore if the average duration of a fixation is reduced by as small an amount as .03-.05 of a second, and the reader makes 10-15 per cent fewer fixations, he is obviously reading appreciably faster, perhaps as much as 40-50 per cent faster. To achieve this faster rate, these two changes in pattern of eye-movements are sufficient, and dramatic change in span of recognition is neither necessary nor is it actually present.[1]

Taylor[2] agrees in general with Spache's observations but points out that the tachistoscope's goal is "to develop rapid but accurate visual discrimination and more organized retention which is sometimes referred to as visual memory. This is in contrast to "span-stretching," so commonly associated with tachistoscopic training in the past." Taylor is in agreement with Spache that "there is no support in research for the premise that span of recognition can be widened to encompass entire phrases and sentences." This belief of Taylor and Spache is in contradiction to the belief of instructors using the paperback scanning method in Reading Dynamics Institutes, as indicated by comments made by Stevens and Orens in the following section.

---

[1] Spache, Speed Reading: Practices and Procedures, pp. 30-31.

[2] Stanford Taylor, "Speed Reading Versus Improved Reading Efficiency," Speed Reading: Practices and Procedures, Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware, Vol. X, ed. Russell G. Stauffer (Newark, Del.: University of Delaware Press, 1963), p. 82.

Paperback Scanning

Little research and much controversy preclude an objective evaluation of the paperback scanning method of increasing reading rate popularized by Reading Dynamics, Inc. In reference to this method, Spache[1] writes that it is physiologically "impossible to read faster than 800 to 900 words per minute," that the "normal levels of 70-80 per cent" comprehension of material read was uncertain since the students are checked only by reporting orally, that eye movements fixate at least once per line, and that students who demonstrate exceptional speeds take advantage of information gained during a five-minute pre-reading survey and from their background of previous knowledge.

Spache's charges were disputed by Stevens and Orens, who maintained that rapid readers can indeed read routine material faster than 1,500 words per minute but they must have a conceptual background in the material. The writers further claim that fast readers are able to break the sound barrier, moving directly from symbol to meaning, involving a highly-developed visual imagery apparatus enabling them to see groups of words in a Gestalt.[1]

---

[1] George G. Spache, "Is This a Breakthrough in Reading?" The Reading Teacher, XV, No. 4 (January, 1962), 258-63.

Research on the paperback scanning method has been done by Taylor, Stauffer, and Liddle. Taylor[2] tested graduates of the Reading Dynamics program to determine if they really could "read an easy novel at 5,000 or 6,000 words per minute," as the program claims. He found none of the 41 graduates tested able to attain such a reading speed and noted that "those who have the higher rates showed the lowest comprehension--an average of 45%."

Stauffer[3] reported a study involving 50 university juniors who were separated into a control and experimental group. While the control group received no training, the experimental group received 12 weeks of training with paperbacks. Findings indicated that "the mean rate of the experimental group was significantly greater" than the control, with "no significant differences between the two groups" in level of comprehension.

---

[1] George L. Stevens and Reginald C. Orens, "Characteristic Reading Techniques of Rapid Readers," The Reading Teacher, XVII, No. 2 (1963), 102-108.

[2] Stanford E. Taylor, "An Evaluation of Forty-One Trainees Who Had Recently Completed the 'Reading Dynamics' Program," Problems, Programs and Projects in College-Adult Reading, Eleventh Yearbook of the National Reading Conference, ed. Emery P. Bliesmer and Ralph C. Staiger (Milwaukee: The National Reading Conference, Inc., 1962), pp. 41-56.

[3] Russell G. Stauffer, "Speed Reading and Versatility," Challenge and Experiment in Reading, International Reading Association Conference Proceedings, Vol. VII, ed. J. Allen Figurel (New York: Scholastic Magazines, 1962), pp. 206-210.

These findings are modified by Liddle[1] who, under Stauffer's guidance, continued the investigation for the first doctoral dissertation on the paperback scanning method. Because his work is one of the major pieces of research on this method, his dissertation abstract is quoted _in toto_:

> A large number of reading rate improvement programs have been conducted over the years. Programs centered around machines, books, or a combination of the two dominate speed reading literature. A common format seems to have evolved. Students have been encouraged to accelerate their rate of reading through drill material by film, by machines geared to expose words at a specified rate, or by directed reading techniques in books. Most reports of research indicate quite similar results irrespective of method. Increases in speed are almost invariably doubled with little or no loss in comprehension.
>
> A new speed reading method which has received wide publicity is the Wood Reading Dynamics Method. It is claimed that rates can be increased three to ten times without loss of comprehension by this method. Since these claims were unusual, an investigation seemed warranted.
>
> The major purpose of this study was to determine if such rate could be achieved without loss in comprehension. Fiction and non-fiction selections were used in an Experimental group trained in the Wood Reading Dynamics Method and a Control group.

---

[1] William Liddle, "An Initial Investigation of the Wood Reading Dynamics Method" (unpublished Doctoral dissertation, University of Delaware, 1965), pp. xii-xiv.

Comprehension was tested on the basis of items of "Fact," "Inference," and "Critical Reflection." Results were analyzed by total scores and by individual types of items. Reading was defined operationally as the number of words claimed read, divided by the time spent and comprehension as the number of items answered correctly on an untimed test.

A population of fifty students at the University of Delaware was randomly divided into Experimental and Control groups and was given pre and post-course tests on fiction and non-fiction selections. The Experimental group received 32 hours of instruction over a 12 week period.

Data were equated for beginning scores. They indicated that 24 of those in the Experimental group at least quadrupled their initial fiction rates, and 22 did so on non-fiction materials. The mean gain in fiction for the Experimental group was 6.1 times its original fiction rate and 5.6 times its initial non-fiction rate. These scores were found to be significantly greater than those of an equally able Control group. Thus, these data substantiate the Wood claims for rate.

An analysis of the data, however, does not substantiate the claim that these exceptional rates are obtained without a loss of comprehension. There was a significant loss in comprehension by the Experimental group in total fiction scores and in each sub-test. Total score non-fiction comprehension and the sub-test, "Critical Reflection," showed differences although they were not significant. In each of the other non-fiction sub-tests there was a significant difference between groups, favoring the control group. These data, therefore, substantiate the claims made for the Wood Reading Dynamics Method in rate but in only one of aspects of comprehension tested.

Retention of Gains

The studies that have checked the retention of gains in reading improvement after a period following completion of a program may be grouped into two categories: those that found a loss in the gains and those that found an increase beyond the scores attained on the testing at the end of the program. The first category would include the studies reported by Staton,[1] Mullins and Mowry,[2] Cosper and Kephart,[3] while the second category would include the studies reported by Massie,[4] and Hieronymus.[5]

---

[1] Thomas F. Staton, "Preliminary Evidence on Permanency of Reading Rate Increases Following Intensive Training in a Reading Lab," American Psychologist, V (1950), 341-42.

[2] Cecil J. Mullins and Harley W. Mowry, "How Long Does Reading Improvement Last?" Personnel Journal, XXXII (1954), 416-17.

[3] Russell Cosper and Newell C. Kephart, "Retention of Reading Skills," Journal of Educational Research, XLIX (1955), 211-16.

[4] James S. Massie, "In-Plant Training for Better Reading," Factory Management and Maintenance, III (March, 1953), 110-12.

[5] Albert W. Hieronymus, "An Analysis of Reading Gains in a College Reading Program" (Masters Thesis, University of Iowa, 1946).

Staton, checking Air Force officers from four months to one year after completion of instruction, found drops in reading rate but not to the beginning level. Mullins and Mowry found a year afterwards that rate had dropped while comprehension remained stable. Cosper and Kephart found that "a significant fraction (ca. 60%) of the speed gained during the developmental program is retained after fourteen months."

On the other hand, Massie found additional gains in rate and comprehension six months after completion of a program, and Hieronymus found that, in his re-testing from two to twenty-three weeks after the end of instruction, "87% of the individual scores were as high or higher on the retest than on the final test."

The research, then, does not provide clear-cut evidence as to the retention of gains in reading improvement after a period following completion of a program.

Flexibility

One of the first calls for consideration of flexible reading was made by Sheldon and Carrillo,[1] who cited the need for flexibility tests. Four years later, Letson[2] explored the construction of such a test in his doctoral dissertation. Shortly thereafter, Braam and Sheldon developed a three-form Flexibility of Reading Test, the first two forms of which have been published.[3] Commenting on the concept of flexibility, Braam and Sheldon write:

> Flexibility in reading is considered to be that aspect of reading which causes the reader to be both adaptable and versatile. The flexible reader adapts his reading to the purpose with which he approaches the printed page, the difficulty level of the material, and the degree of his own familiarity with the subject of the material. The goal of a flexible reader is to obtain the desired degree of understanding with the greatest amount of efficiency.[4]

Recently Stauffer observed that only a "naive" person will now ask, "What is your rate of reading?"

---

[1] William D. Sheldon and Lawrence Carrillo, "Flexibility of Reading Rate," Journal of Educational Psychology, XLIX (May, 1952), 299-305.

[2] Charles T. Letson, "The Construction and Evaluation of a Test to Measure the Flexibility of Reading Rate" (unpublished doctoral dissertation, Boston University, School of Education, 1956).

[3] Braam and Sheldon, op. cit.

[4] Ibid., p. 17.

instead of the "legitimate" question of "What is your rate of reading science? or history? or fiction? or mathematics? or biology?"[1]

There is a dearth of studies in the area of reading flexibility, and the relatively few available yield conflicting results. For example, Nason and McDonald,[2] citing certain studies, express the view that flexible reading is a result of various factors; that is, they explain, instructors tend to tell students to read faster or slower whereas the results of studies by Hill,[3] Letson,[4] McDonald,[5] Taylor,[6] and Sister

---

[1] Stauffer, Speed Reading: Practices and Procedures, p. 42.

[2] Harold M. Nason and Arthur S. McDonald, Reading Flexibility, Reading Newsletter No. 31, Educational Developmental Laboratories, January, 1964, pp. 1, 2.

[3] Walter R. Hill, "Influence of Direction Upon the Reading Flexibility of Advanced College Readers," New Concepts in College-Adult Reading, Thirteenth Yearbook of the National Reading Conference, ed. Eric L. Thurston and Lawrence E. Hafner (Milwaukee: The National Reading Conference, Inc., 1964), pp. 119-25.

[4] Charles T. Letson, "The Relative Influence of Material and Purpose on Reading Rates," Journal of Educational Research, LII (February, 1959), 238-40.

[5] Arthur S. McDonald, "Reading Flexibility: Its Meaning and Development," Educational Developmental Laboratories Research and Information Reprint No. 9.

[6] Stanford Taylor, Helen Frackenpohl, and James L. Pettee, "A Report on Two Studies of the Validity of Eye-Movement Photography as a Measure of Reading Performance," Reading in a Changing Society, International Reading Association Conference Proceedings, Vol. II (New York: Scholastic Magazine, 1959), pp. 240-45.

Theophemia[1] indicate that mere telling will not result in a change in reading rate.

However, Davis[2] has expressed the view that, if told, a student may read from 40 to 80 per cent faster, and Laycock[3] found that students would change their reading rate when told--and only when told. Laycock attempted to determine if students who had been identified as flexible readers would change their rate when they met different kinds of material; his findings indicated that only when told did they change their reading rate. Other students identified as inflexible readers, when told, were unable to read faster; they made fewer eye fixations than previously but fixated for longer durations. Laycock also checked the *Einstellung* (inflexible persistence) effect via tricky arithmetic problems contained in the *Luchins Water Jar Test*. He found that the flexible readers tended to change their method of attacking these problems but the inflexible readers did not, indicating the influence of personality factors in this type of academic performance.

---

[1] Sister M. Theophemia, "Teaching Flexibility in Reading," *Challenge and Experiment in Reading*, International Reading Association Conference Proceedings, Vol. VII, ed. J. Allen Figurel (New York: Scholastic Magazines, 1962), pp. 138-39.

[2] Davis, *op. cit.*

[3] Frank Laycock, "Flexibility in Reading Rate and *Einstellung*," *Perceptual and Motor Skills*, VIII (1958), 123-29.

In an unpublished study by Silvaroli and Sherk,[1] students enrolled in the Improvement of Learning course at Syracuse University were checked to determine "if mature readers were given a training period in flexibility of reading, and subsequently put into a forced reading situation where they were compelled to read at a uniform rate (controlled reading), as opposed to a forced situation where they were free to be flexible, the performance in the 'freedom-to-be-flexible' situation would be superior to performance in the inflexible situation." Data obtained supported the hypothesis, indicating the possible restrictive influence of group machines in the development of flexibility.

Robinson and Hall[2] measured reading facility of college freshmen in the reading of lengthy passages relating to art, history, fiction, and science. They concluded that reading in different subject matter fields is not highly related and poor readers "read different subject matter selections at comparable rates and good readers adjust these rates to comparative difficulty levels of various selections."

---

[1] Nicholas Silvaroli and John Sherk, Jr., "Does Flexibility Make a Difference?" (unpublished study, Syracuse University, Spring, 1962), 8 pp.

[2] Francis P. Robinson and Prudence Hall, "Studies of Higher-Level Reading Abilities," Journal of Educational Psychology, XXXII (April, 1941), 241-52.

Summary

In reviewing the related research, four areas seemed pertinent: 1) the effectiveness of tachistoscopic and controlled pacing devices in increasing reading rate; 2) the effectiveness of paperback scanning in increasing rate; 3) the retention of gains in reading improvement after completion of a reading improvement program; and 4) the increase of reading flexibility.

Much research has been done to determine the effectiveness of tachistoscopic and controlled pacing devices. However, the results of the studies are not clear-cut in that most studies used the combined-methods approach and, consequently, the amount that each method contributed to the results is difficult to ascertain. Even the relatively few studies which have used only one method tend to be more descriptive than experimental.

In contrast, relatively little research has been done in the remaining three areas. However, like above, the results of the research tend to be conflicting, with most studies having sufficient weaknesses in design and execution to necessitate caution in interpreting the results.

The review of the literature appears to support the need for further investigation into areas related to the effectiveness of different methods of improving reading rate, comprehension, and flexibility, and their retention after a period of time following completion of instruction.

CHAPTER III

EXPERIMENTAL DESIGN

Pilot Study

During the first semester of the 1964-65 school year, the writer designed a pilot study, which was conducted during the first five weeks of the second semester of that year. The following hypothesis was tested:

> There is no difference in the effectiveness of instruction in improving reading rate through the following methods:[1]
>
> a. Controlled Reader--(inflexible)
>
> b. Controlled Pacing--(inflexible with same material as in the Controlled Reader)
>
> c. Paperback Scanning--(flexible)
>
> d. Comprehension--(no direct emphasis on rate)

The criterion measure was the Van Wagenen Rate of Comprehension Test.[2] Population sample was 104 freshmen in the Improvement of Learning course and, for a control group, 50 students in a Freshman English course.

---

[1] Description of the first three methods will be found on pages 43-48 . The fourth method involved no direction instruction in increasing reading rate; attention was directed toward improving comprehension skills, particularly those related to critical reading.

[2] M. J. Van Wagenen and August Dvorak, Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities (Minneapolis: University of Minnesota Press, 1953).

In order to determine if the effect of one method of instruction might be significantly different from that of another method, an analysis of covariance was made of the pre and post test data, using the Tape Storage and Retrieval (TSAR) program[1] at the university's computing center. The analysis of covariance controlled for differences in verbal aptitude as determined by College Board scores. Results are presented in Table 1.

TABLE 1

ANALYSIS OF COVARIANCE OF GAINS IN READING RATE ON THE VAN WAGENEN RATE OF COMPREHENSION TEST (Pilot Study)

Variable	Source of Variation	Sum of Squares	df	Mean Square	F
Verbal Aptitude	Between Groups	46,467.790	4	11,591.947	8.47**
	Within Groups	127,196.33	92	1,382.569	

**p < .01

Inspection of Table 1 reveals a significant F value at the .01 level of confidence. The _t_-test[2] was applied to pairs of means, with the results presented in Table 2.

---

[1] _Tape Storage and Retrieval System_, Preliminary User's Manual (Durham, N.C.: Duke University, January, 1964), pp. 14-15.

[2] E. F. Lindquist, "Analysis of Covariance," _Design and Analysis of Experiments in Psychology and Education_ (Boston: Houghton Mifflin Company, 1954), pp. 217-27 _passim_.

TABLE 2

CORRELATED t-TESTS FOR PAIRS OF MEANS FOLLOWING ANALYSIS OF COVARIANCE ON THE VAN WAGENEN RATE OF COMPREHENSION TEST (Pilot Study)

Groups	t
Controlled Pacing** Controlled Reader	4.774**
Controlled Pacing Paperback Scanning	1.5821
Controlled Pacing** Comprehension	3.6380**
Controlled Pacing** Control	5.4200**
Controlled Reader Paperback Scanning	.6501
Controlled Reader Comprehension	1.3400
Controlled Reader** Control	2.8000**
Paperback Scanning Comprehension	.1904
Paperback Scanning** Control	3.4080**
Comprehension Control	.0011

**significantly superior $\quad$ **$p < .01$

An inspection of Table 2 indicates that three of the treatment methods--Controlled Pacing, Controlled Reader, and Paperback Scanning--were all significantly superior in rate to the control group at the .01 level of confidence. In addition, the Controlled Pacing group was also significantly superior to the Controlled Reader group as well as the Comprehension group at the .01 level.

Based on the statistical analysis, the null hypothesis, which states that there is no difference in the effectiveness of instruction in improving reading rate through different methods, was rejected.

Recommendations

Recommendations for a more intensive, better controlled extension of the pilot study include the following:

1. The comprehension group should be replaced by a tachistoscopic group. The comprehension group was originally designed to serve the purpose of a control group but was modified with the emergence of a control group from the English Department.
2. The Dale-Chall Readability Formula should be applied to all the training material to equate readability. The paperback books should be on the same readability level as the material used in the Controlled Reader and Controlled Pacing methods. Similarly, material used in the proposed tachistoscopic method should have a comparable readability.
3. Further consideration should be given to the fact that three sections meet for extended sessions two afternoons a week, while the remaining sections meet three mornings a week. Total classroom time is equivalent. However, the time variable may be a factor in the findings: consequently, the data should be inspected to determine the most appropriate techniques of analyses.

4. In order to insure familiarity with the materials and the design of the study, a one-day planning session with the instructors before classes start in September is recommended. This planning session would provide a greater consistency in the instruction of the methods to be compared.

These recommendations were incorporated into the major investigation.

Major Investigation

Population

This present investigation, conducted during the 1965-66 school year, is based upon the findings and considerations arising from the pilot study. As in the pilot study, the instructors of the Improvement of Learning sections were experienced teachers, all having had approximately five years' experience on various grade levels. Two instructors who participated in the pilot study also participated in the larger investigation; three instructors were newly oriented. The writer did not teach any of the sections in the investigation.

Twelve sections of the Improvement of Learning course at Syracuse University were involved in the major investigation. This course is designed to develop skills in reading rate and comprehension, vocabulary and study. Nine sections meet for one 50-minute session three mornings a week; three sections meet for extended sessions two afternoons a week. Total classroom time is 150 minutes a week. Although the course is open to all who wish to enroll, the majority of students are freshmen. Those whose College Board verbal scores are below 500 are recommended for enrollment in Improvement of Learning. Only fully matriculated freshmen were considered in the investigation. For the control group, two instructors from the university's English Department contributed five sections in response to a request for volunteers from Dr. Randall Brune, director of Freshman English.

Tables 3 and 4 contain data pertaining to the population sample in the major investigation. (As a basis for comparison, the average verbal and math scores on the College Boards for this total freshman class of 2,360 were 569 and 591, respectively.)

TABLE 3

DESCRIPTIVE STATISTICS OF POPULATION SAMPLE

Groups	Number		Total	College Board Scores			
	Male	Female		Verbal Mean	SD	Math Mean	SD
Tachistoscope	32	15	47	487	45.2	555	73.2
Controlled Reader	32	11	43	485	48.4	564	70.4
Controlled Pacing	30	15	45	482	60.1	573	78.3
Paperback Scanning	33	11	44	493	55.6	580	86.3
Control	48	28	76	512	33.4	564	67.9

TABLE 4

MEAN SCORES IN WORDS PER MINUTE ON TWO PRE-TESTS

Group	Number of Students	Van Wagenen Rate of Comprehension Test		Number of Students	Robinson-Hall Reading Test of History	
		Mean	SD		Mean	SD
Tachistoscope	45	216	48.5	46	225	52.5
Controlled Reader	42	195	39.3	43	213	58.7
Controlled Pacing	44	203	34.7	45	231	54.0
Paperback Scanning	43	205	41.1	43	235	47.9
Control	48	231	87.8	45	244	53.3

Inspection of Table 3 indicates that the number in each treatment group is relatively comparable, with males comprising approximately two-thirds the population sample. Inspection further indicates that the college board verbal and math scores are comparable among the treatment groups.

Inspection of Table 4 indicates that the initial reading rates are comparable among treatment groups on the two measuring instruments, with the control group having the highest initial rate on both instruments.

Procedures

The amount of time required for each major aspect of this investigation is presented:

Major Aspects	Number of Sessions
Orientation to Course	1
Pre-Testing	3
Training Sessions	17
Post-Testing	2
Post-Post-Testing	2
	25

Lesson plans for these 25 sessions may be found in Appendix B. At the Improvement of Learning staff luncheon-meeting each Friday, these lesson plans were distributed (one week in advance) and discussed. In addition, the writer questioned each instructor at the end of each day of instruction as to the practical adequacy of the plans.

The lesson plans are designed for the sessions meeting three times a week. Consequently, the instructor who taught the extended sessions meeting twice a week modified the plans to fit his meeting times. Since this particular instructor was also in the pilot study, he had previous experience in making this modification.

During the week preceding the beginning of the course, the writer held an informal "workshop." At this time, he and the two other veteran instructors explained in detail the Improvement of Learning course. The proposed investigation was discussed, the various methods explained, and the measuring instruments examined. In short, before the beginning of instruction the whole Improvement of Learning staff was completely familiar with the investigation.

Methods

The treatment methods used by the instructors were randomly assigned. Three sections were instructed through the Tachistoscope method, three through the Controlled Reader, three through the Controlled Pacing, and three through the Paperback Scanning method.

Each method took approximately thirty minutes each session. For the remaining time in all sections under all methods, students read paperbacks with the encouragement to apply their newly acquired skills. The paperbacks used for this transfer reading were not the same titles used for training in the Paperback Scanning method. These transfer reading paperbacks were selected on the basis of the following criteria: 1) they were not being used in any other class by the freshmen and 2) they were interesting to the freshmen. One book was read each week, with total time for transfer reading amounting to two and one-half hours.

On the first session each week during the time normally allotted for transfer reading, a quiz was given to all sections on specified chapters in a vocabulary text.[1]

---

[1] Wilfred Funk and Norman Lewis, _30 Days to a More Powerful Vocabulary_ (New York: Washington Square Press, 1942).

With all methods, the intent was to present the programs following as closely as possible the recommendations made by the publishers. To insure similarity of presentation, lesson plans were prepared for the instructors of all methods for every session of the investigation; these plans were discussed with the instructors each week previous to the execution of the plans.

Following is a description of each of the four methods:

Method A--Tachistoscopic.--Essentially, each day's lesson involved the use of Classroom Kit VII (RK-7), published by Learning Through Seeing, Inc. The kit contains four types of filmstrips: Seeing Skills, Word Mastery, Phrase Mastery, and Reading Development. Material on the filmstrips is flashed, using a filmstrip projector and a special device, at 1/40 second, and two strips were viewed each session. As an illustration, during the first training session the students viewed the first filmstrip from Seeing Skills and the first filmstrips from Word Mastery. The Seeing Skills strip includes forms and numbers which the students record and then check for accuracy. The Word Mastery strip contains words, flashed, recorded and checked. The students record their words in notebooks. The publisher claims that reading rate and comprehension will be increased through the use of the material.[1]

Method B--Controlled Reader.--The instruction closely followed the recommendations made by the publisher, Educational Developmental Laboratories. Each day's lesson involved building a readiness for the filmstrip to be viewed, discussing the vocabulary, viewing the strip, and then checking comprehension through multiple choice questions. To correspond to the readability level[2] of the material used in the other methods, Set IJ was used. Each student used an EDL-study guide, which corresponded to the filmstrips in Set IJ, so that the program might be followed exactly as recommended. On each training session the filmstrip was viewed at approximately 30 words faster than the strip on the preceding session. The first filmstrip was viewed at 150 words a minute and, on the seventeenth and final session, the students viewed a filmstrip at 540 words a minute.

---

[1] Tachist-O-Films Manual (Sunland, Calif.: Learning Through Seeing, Inc., 1965), pp. 1, 2.

[2] The readability level was determined by the Dale-Chall Formula. See Edgar Dale and Jeanne S. Chall, "A Formula for Predicting Readability," Educational Research Bulletin, XXVII (January 21, 1948), 11-20, 28.

During the last six sessions, the speed of the filmstrips combined with the reading rate attained by the students made it necessary to group students. Two groups were formed in each section and the filmstrip was viewed twice by each group--once at a speed 30 words a minute faster than the strip on the preceding session for the faster group, and once at a lowered speed for the slower group. In addition, during the remaining six training sessions, on the recommendation of the publisher, this method incorporated the practice of viewing the last session's filmstrip at the last session's speed before beginning the lesson using the new filmstrip. The publisher claims that reading rate, comprehension, and flexibility (referred to by the publisher as variability) will be increased through the use of the material.[1]

Method C--Controlled Pacing.--The only difference between this method and Method B was that the reading matter on the filmstrips used in Method B was in this method presented on paper, with the same number of words per line as on the filmstrips. To substitute for the left-to-right visual pacing of the machine, students moved 3 x 5 cards containing slots large enough to reveal half a line, along each line and down the page, to the pacing of a metronome, which was synchronized to the steady click made by the Controlled Reader. As in Method B, there was an introduction of the material about to be read, a discussion of the vocabulary followed by the reading of the passage and the comprehension check.

---

[1] _Controlled Reader Study Guide_ (Huntington, N.Y.: Educational Developmental Laboratories, 1963), pp. 6, 7.

During the last sessions, groups were formed as needed. During these sessions, to remain as close as possible to Method B, the practice was incorporated of reading the last session's reading at the last session's speed before beginning the lesson using the new reading. Each student used an EDL-Study Guide.

Method D--Paperback Scanning.--In this method, the reader is required to scan each page under time pressure. For the first two minutes of this exercise, the student was allowed 8 seconds a page; for the next two minutes, 7 seconds a page and on down to 2 seconds a page and then immediately up to 10 seconds a page. A metronome was used to click each second, with the instructor indicating the start of a new page, thereby insuring controlled pacing of the material.

Primary objective of this exercise is to accustom the eyes to move vertically. Paperbacks were selected with a particular consideration to a comparable readability level as determined by the Dale-Chall Formula to the material used in the other methods; in addition, consideration was given to type size and line length, following Tinker's recommendations of 10-point type and 19 pica line length.[1] To correspond to the other methods, 10-item quizzes based on the paperbacks were prepared. The method, which basically involves a five-minute pre-test, the countdown exercise described above, and then a post-test, requires approximately 30 minutes, like the other methods.

Control

Instructors of the control sections gave their students standard instruction in Freshman English. To counterbalance the Hawthorne Effect, the control sections were told that they were part of the experiment. A brief statement was read to each treatment group at the first meeting which explained that all sections would cover similar material but through different methods.

---

[1] Miles A. Tinker, "Legibility of Type for Adult Books," Bases for Effective Reading (Minneapolis: University of Minnesota Press, 1965), pp. 125-56 passim.

Measuring Instruments

Before the 17 training sessions, there were 4 sessions: 1 for orientation to the course and 3 for pre-testing followed immediately by the first training session. Immediately after the 17 training sessions were 2 sessions for post-testing; 8 weeks later, 2 more sessions were devoted to testing to determine retention of gains in reading rate.

Measuring instruments were selected after examining approximately twenty-five tests which claim to test rate, comprehension, and/or flexibility. The investigator sought a test composed of short passages and a test composed of a long passage to allow the reader to perform on these different kinds of measures. In addition, the investigator sought to find tests with high reliabilities. The following measuring instruments were selected:

1. The Van Wagenen Rate of Comprehension Test

(Forms D, C, and B). Testing Time: 4 minutes. The test is composed of 30-word passages; in each passage there is an incongruous word, which the student must cross out. This is almost a sheer rate of reading test, since the level of comprehension is such that the reader should attain 100 per cent. Reliability is reported as being between .86 and .96, with a 15-word error of measurement.[1]

2. The Robinson-Hall Reading Test of History (Forms Canada and Russia). Testing Time: approximately 20 minutes--10 minutes to read and about 10 minutes to answer questions. The test is approximately 3,000 words in length. The student notes where he is at the end of 10 minutes or, if finished earlier, notes the time that elapsed, and begins responding to test items, nearly all multiple choice. The reliability is reported as .91 for reading rate.[2] The investigator obtained a comprehension reliability of .37.[3]

---

[1] M. J. Van Wagenen and August Dvorak, Manual of Directions for the Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities (Minneapolis: University of Minnesota, 1953), pp. 17-18.

[2] Francis P. Robinson and Prudence Hall, Manual for the Robinson-Hall Reading Tests (Columbus: College of Education, Ohio State University, 1949), pp. 1, 2.

[3] For an explanation of the manner in which the reliability was obtained, see Appendix G.

3. The Braam-Sheldon Flexibility of Reading Test (Forms 1, 2, and 3). Testing Time: approximately 40 minutes. The test is composed of five passages selected from different areas (e.g., narrative, literature, science, history, and psychology). The student is required to respond to ten multiple choice items following each passage. In a description of the development of the test, Braam explains that the narrative passages for the three forms were taken from the same source, with this procedure being followed for the other passages, in order to make the tests comparable in respect to difficulty.

> This was the only control established for the level of difficulty of the material, although the grade level of each selection was determined by the Dale-Chall readability formula. No attempt was made to control or evaluate student familiarity with the subject, or other variables related to either the printed matter or the students.
>
> An attempt was made, however, to hold the purpose for reading each selection constant throughout the test. For each selection the individual was instructed to 'Read as quickly as you can and still understand the general content of this selection.'[1]

Grade levels as determined by the readability formula range from 9-10 for fiction and literature selections to

---

[1] Leonard S. Braam, "Developing and Measuring Flexibility in Reading," Reading Teacher, XVI, No. 4 (January, 1963), 248.

16 for the psychology selection. The present investigator obtained an over-all rate reliability of .89 between the first and second forms and .90 between the second and third forms; obtained also were over-all comprehension reliabilities of .66 and .52, respectively, between first-second and second-third forms.[1] Because only the first two forms of the test have been published, the investigator used multilith copies of all three forms. The range between the fastest and slowest rates for each student was determined and given a number designation based upon the following chart[2] developed by the test authors:

	Range of Rate	Nature of Flexibility
1	25--50	Very Poor
2	50--100	Poor to Fair
3	100--125	Fair to Good
4	125--150	Good
5	150--200	Very Good
6	200--300	Excellent
7	300 plus	Outstanding

The writer arbitrarily designated each reading range with the number that appears at the left.

---

[1] For an explanation of the manner in which the reliabilities were obtained, see Appendix F.

[2] Braam and Sheldon, Developing Efficient Reading, p. 17.

Testing for the treatment and control groups was scheduled as follows:

Pre-Tests	Post-Tests	Post-Post-Tests
Van Wagenen	Van Wagenen	Van Wagenen
Robinson-Hall	Robinson-Hall	
Braam-Sheldon	Braam-Sheldon	Braam-Sheldon

From the above indicated measuring instruments, the following data were obtained:

a. Initial reading rate and comprehension level

b. Final reading rate and comprehension level

c. Retention of gains in reading rate and comprehension level

d. Initial reading flexibility and comprehension level

e. Final reading flexibility and comprehension level

f. Retention of gains in reading flexibility and comprehension level.

In addition, Syracuse University Freshmen Test Profile Cards provided the following data:

g. College Entrance Examination Board Scholastic Aptitude Test--verbal and math scores

General Design

The design used for this investigation was the Non-equivalent Control Group Design:[1]

$R_t\ O_1\ X_1\ O_2\ \ldots\ O_{11}$ R = randomization

$R_t\ O_3\ X_2\ O_4\ \ldots\ O_{12}$ O = observation (pre)

$R_t\ O_5\ X_3\ O_6\ \ldots\ O_{13}$ X = treatment variables

$R_t\ O_7\ X_4\ O_8\ \ldots\ O_{14}$ O = observation (post)

$R_c\ O_9\ \ \ O_{10}\ \ldots\ O_{15}$ O = observation (post-post)

t = treatment

c = control

The Non-equivalent Control Group Design was selected because it closely fit the experimental situation. It was not possible to randomize either students or instructors; the treatment variable, however, for each section was randomly selected. Of this design, Campbell and Stanley write:

> One of the most widespread experimental designs in educational research involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence. Rather, the groups constitute naturally assembled collectives

---

[1] This particular design is discussed in detail in Handbook of Research on Teaching, ed. N. L. Gage (Chicago: Rand McNally & Company, 1963). See chapter by Donald T. Campbell and Julian C. Stanley, "Experimental and Quasi-Experimental Designs for Research on Teaching," pp. 171-246.

> such as classrooms, as similar as availability permits but yet not so similar that one can dispense with the pretest.[1]

Statistical Analyses

To compensate for any possible initial differences between groups, the major statistical method used to analyze the data was the analysis of covariance. Attention was given to the variables of verbal and math aptitude and sex. In addition, after significant F values were found, the *t*-test was applied to all possible combinations of group means. The *t*-test was also used to determine any significant differences in the level of comprehension scores on the various testings. The Pearson product-moment coefficient of correlation was used to obtain a correlation matrix and to test reliabilities. Data were processed through the TSAR program.

Summary

The major investigation, which extended over a period of one semester, included 25 sessions, 17 of which were training sessions extending over a six-week period. Three instruments were used to obtain data to test thirteen hypotheses.

---

[1] *Ibid*., p. 217.

The population sample involved 255 students from the Improvement of Learning course and the Freshman English course at Syracuse University. Instructors were graduate assistants from the Reading Center and the English Department. The four treatment methods used by the instructors were randomly assigned.

The design used for this investigation was the Non-equivalent Control Group Design. The major statistical method was the analysis of covariance, with attention given to the variables of verbal and math aptitude and sex. Other statistics used included the *t*-test and the product-moment correlation coefficient.

CHAPTER IV

RESULTS--TESTING OF HYPOTHESES

This investigation was designed to test thirteen hypotheses relating to increasing reading effectiveness through different methods of instruction. The results of this investigation are presented in this chapter. Discussion of these results, along with recommendations for further research and implications for educational practices, will be found in the final chapter.

Data relating to the first three hypotheses tested are presented in Table 5. Inspection of Table 5 reveals that gains in rate were made by all experimental groups, as measured by the standardized reading tests. These gains are significant at the .01 level of confidence. No method resulted in significant changes in comprehension. Significant gains were made in reading flexibility by three of the four experimental groups. The control group made no significant gains in these variables with the exception of rate as measured by the *Robinson-Hall Reading Test*.

TABLE 5

RELATED t-TESTS FOR PRE AND POST MEAN SCORES IN RATE, COMPREHENSION, AND FLEXIBILITY

Variable	Measuring Instrument	Group	N	Mean Score Pre Test	SD	Mean Score Post Test	SD	Diff	t
Rate	Van Wagenen	Paperback	43	205	41.1	264	55.7	59	9.00^{**}
		C. Pacing	44	203	34.7	230	45.1	27	4.17^{**}
		C. Reader	42	194	39.3	226	57.6	32	5.51^{**}
		Tachistoscopic	45	216	48.4	241	43.9	25	3.23^{**}
		Control	48	231	87.8	232	90.2	1	0.22
Rate	Robinson-Hall	Paperback	43	235	47.9	389	249.7	154	4.39^{**}
		C. Pacing	45	231	54.0	332	98.1	101	7.36^{**}
		C. Reader	43	213	58.7	288	76.9	75	8.84^{**}
		Tachistoscopic	46	225	52.5	294	99.6	69	6.70^{**}
		Control	45	244	53.3	300	103.6	56	4.66^{**}
Comprehension	Robinson-Hall	Paperback	35	68.0	13.4	66.6	11.3	-1.4	0.67
		C. Pacing	44	65.9	12.7	66.0	8.5	.1	0.06
		C. Reader	41	69.2	15.4	68.3	11.9	- .9	0.30
		Tachistoscopic	29	71.7	14.0	70.9	9.1	- .8	0.27
		Control	45	67.5	14.9	68.7	9.9	1.2	0.56
Comprehension	Braam-Sheldon	Paperback	39	75.7	13.3	73.1	11.0	-2.6	1.13
		C. Pacing	41	75.4	8.2	74.8	8.8	- .6	0.47
		C. Reader	42	74.5	14.5	75.6	9.8	1.1	0.50
		Tachistoscopic	46	78.3	10.1	77.2	8.0	-1.1	0.76
Flexibility	Braam-Sheldon	Paperback	43	2.3	1.4	4.0	2.0	1.7	5.73^{**}
		C. Pacing	45	2.1	1.2	3.2	1.6	1.1	4.67^{**}
		C. Reader	42	1.6	0.9	2.8	1.6	1.2	3.45^{**}
		Tachistoscopic	47	2.0	2.0	2.5	1.2	.5	2.42

$^{**}p < .01$

Consequently, on the basis of data presented in Table 5, the following conclusions were reached for the first three hypotheses:

1. No gains in reading rate will result from any of four different methods of instruction.

This hypothesis was rejected.

2. No gains in reading comprehension will result from any of the four different methods of instruction.

This hypothesis was accepted.

3. No gains in reading flexibility will result from any of four different methods of instruction.

This hypothesis was rejected.

Inspection of Table 5 further reveals that the post-test scores on rate measured by the Robinson-Hall Test reveal marked differences in the standard deviations achieved by the paperback scanning and controlled reader groups; the former method produced a variability nearly three times that of the latter. Of additional interest is the finding that all treatment methods produced significant gains in reading flexibility except for the tachistoscopic method.

The following three hypotheses were based upon the assumption that the preceding three would be rejected. As indicated, H_1 and H_3 were rejected, but H_2 was accepted; consequently, the fifth hypothesis, which is based upon the rejection of the second hypothesis, is untestable. That is, because there were no gains in reading comprehension, one cannot speak of retention of gains in comprehension.

Table 6 presents data revealing that gains made in rate and flexibility appear to be retained when tested eight weeks after completion of instruction. On the basis of these data, the following conclusions were reached for the second three hypotheses:

4. There will be no retention of gains in reading rate resulting from any of four different methods of instruction.

This hypothesis was rejected.

5. There will be no retention of gains in reading comprehension resulting from any of four different methods of instruction.

Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_5 cannot be tested.

TABLE 6

RELATED *t*-TESTS FOR POST AND POST-POST MEAN SCORES IN RATE AND FLEXIBILITY

Variable	Measuring Instrument	Group	N	Mean Score Post Test	SD	Mean Score Post-Post	SD	Diff.	*t*
Rate	Van Wagenen	Paperback	43	264	55.7	273	63.4	9	1.39
		C. Pacing	44	230	45.1	236	39.2	6	1.09
		C. Reader	42	226	57.6	232	57.0	6	1.51
		Tachistoscopic	45	242	43.9	247	54.1	3	1.08
		Control	48	232	90.2	225	59.7	-7	0.43
Flexibility	Braam-Sheldon	Paperback	43	4.0	2.0	4.3	2.2	.3	0.84
		C. Pacing	45	3.2	1.6	3.3	1.7	.1	0.30
		C. Reader	42	2.5	1.6	3.0	1.6	.5	2.16
		Tachistoscopic	47	2.5	1.2	2.9	1.7	.4	1.23

6. There will be no retention of gains in reading flexibility resulting from any of four different methods of instruction.

This hypothesis was rejected.

Inspection of Table 6 reveals that retention gains on the Van Wagenen Test fall within the test's 15-word error of measurement, with the treatment groups on the positive side and the control group on the negative side.

7. There will be no differences in gains in reading rate resulting from different methods of instruction.

This hypothesis was rejected. The following four tables contain data bearing upon this hypothesis. Tables 7 and 9 contain the results of the analysis of covariance with the variable of verbal and math aptitude and sex covaried out, using different measuring instruments. Results of *t*-tests are reported in Tables 8 and 10.

Because significant F values were found when verbal aptitude, math aptitude, and sex were held constant, the *t*-test was applied to all possible combinations of pairs of means, with the results reported in Table 8.

TABLE 7

ANALYSIS OF COVARIANCE OF GAINS IN READING RATE ON THE VAN WAGENEN RATE OF COMPREHENSION TEST

Variable Held Constant	Source of Variation	Sum of Squares	df	Mean Square	F
Verbal Aptitude	Between Groups	64,813.38	4	16,203.35	8.06**
	Within Groups	390,779.84	195	2,004.00	
Math Aptitude	Between Groups	64,994.60	4	16,248.65	8.15**
	Within Groups	390,460.30	195	2,002.36	
Sex	Between Groups	30,871.37	3	10,290.46	5.19**
	Within Groups	335,256.49	169	1,983.77	

**p < .01

Inspection of Table 8 reveals ten significant differences between pairs of means at the .01 level of confidence when verbal aptitude, math aptitude, and sex were held constant. Nine of the 10 _t_-tests favor the paperback scanning method; of these 9, 7 indicate superiority over other treatment methods and 2 over the control group. The tenth significant _t_-test favors the controlled reader group over the control group.

TABLE 8

CORRELATED t-TESTS FOR PAIRS OF MEANS FOLLOWING ANALYSIS OF COVARIANCE ON THE VAN WAGENEN RATE OF COMPREHENSION TEST

Groups	Verbal t	Math t	Sex t
Tachistoscopic Controlled Reader	1.234	.979	.534
Tachistoscopic Controlled Pacing	.407	.485	.174
Tachistoscopic Paperback Scanning**	.960	3.771**	2.954**
Tachistoscopic Control	1.443	1.935	
Controlled Reader Controlled Pacing	.213	.496	.036
Controlled Reader Paperback Scanning**	2.425	2.729**	2.849**
Controlled Reader** Control	2.591	3.528**	
Controlled Pacing Paperback Scanning**	3.148**	3.293**	3.181**
Controlled Pacing Control	1.983	2.398	
Paperback Scanning** Control	5.074**	5.604**	

**significantly superior

**p < .01 level of confidence

TABLE 9

ANALYSIS OF COVARIANCE OF GAINS IN READING RATE ON THE ROBINSON-HALL READING TEST OF HISTORY

Variable Held Constant	Source of Variation	Sum of Squares	df	Mean Square	F
Verbal Aptitude	Between Groups	257,355.86	4	64,338.97	4.19**
	Within Groups	3,155,804.20	202	15,622.79	
Math Aptitude	Between Groups	228,690.23	4	57,172.56	3.69**
	Within Groups	3,132,622.00	202	15,508.02	
Sex	Between Groups	189,756.72	3	63,252.24	3.74
	Within Groups	2,907,244.80	172	16,902.59	

**p < .01

No significant F value was found when sex was held constant.

Because significant F values were found when verbal aptitude and math aptitude were held constant, the t-test was applied to all possible combinations of pairs of means, with the results reported in Table 10.

TABLE 10

CORRELATED *t*-TESTS FOR PAIRS OF MEANS FOLLOWING ANALYSIS OF COVARIANCE ON THE ROBINSON-HALL READING TEST OF HISTORY

Groups	Verbal *t*	Math *t*
Tachistoscopic Controlled Reader	.096	.918
Tachistoscopic Controlled Pacing	1.027	.881
Tachistoscopic Paperback Scanning**	2.985**	2.891**
Tachistoscopic Control	.721	.632
Controlled Reader Controlled Pacing	.912	.766
Controlled Reader Paperback Scanning**	2.835**	2.756**
Controlled Reader Control	.803	.711
Controlled Pacing Paperback Scanning	1.897	2.026
Controlled Pacing Control	1.720	1.491
Paperback Scanning** Control	3.677**	3.496**

**significantly superior

**$p < .01$ level of confidence

Inspection of Table 10 reveals significant differences at the .01 level of confidence in six mean comparisons when verbal aptitude and math aptitude were held constant, all favoring the paperback scanning method. On the basis of the data presented in Tables 7 through 10, the seventh hypothesis was rejected.

8. There will be no differences in gains in reading comprehension resulting from different methods of instruction.

Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_8 cannot be tested.

9. There will be no differences in gains in reading flexibility resulting from different methods of instruction.

This hypothesis was accepted. Table 11 contains data bearing upon this hypothesis.

Inspection of Table 11 reveals no F value significant at the .01 level of confidence when verbal aptitude and math aptitude and sex were held constant, indicating no significant differences in gains in reading flexibility.

TABLE 11

ANALYSIS OF COVARIANCE OF GAINS IN READING FLEXIBILITY ON THE BRAAM-SHELDON FLEXIBILITY OF READING TEST

Variable Held Constant	Source of Variation	Sum of Squares	df	Mean Square	F
Verbal Aptitude	Between Groups	28.80	3	9.60	3.34
	Within Groups	466.02	162	2.88	
Math Aptitude	Between Groups	27.14	3	9.05	3.17
	Within Groups	462.26	162	2.85	
Sex	Between Groups	31.63	3	10.54	3.61
	Within Groups	502.88	172	2.92	

10. There will be no differences in retention of gains in reading rate resulting from different methods of instruction.

This hypothesis was rejected. Table 12 contains data bearing upon this hypothesis.

Inspection of Table 12 reveals no significant F value at the .01 level of confidence when verbal aptitude, math aptitude, and sex are held constant, indicating no

TABLE 12

ANALYSIS OF COVARIANCE OF RETENTION GAINS IN READING RATE ON THE VAN WAGENEN RATE OF COMPREHENSION TEST

Variable Held Constant	Source of Variation	Sum of Squares	df	Mean Square	F
Verbal Aptitude	Between Groups	15,549.55	4	3,887.38	.98
	Within Groups	770,604.07	195	3,951.82	
Math Aptitude	Between Groups	16,802.65	4	4,200.66	1.07
	Within Groups	766,514.40	195	3,930.84	
Sex	Between Groups	335.25	3	111.75	1.84
	Within Groups	10,244.09	169	60.62	

significant differences in retention of gains in reading rate when testing occurs eight weeks after the end of instruction.

11. There will be no differences in retention of gains in reading comprehension resulting from different methods of instruction.

Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_{11} cannot be tested.

12. There will be no differences in retention of gains in reading flexibility resulting from different methods of instruction.

Since this hypothesis is contingent upon the rejection of H9, which was accepted, H_{12} cannot be tested.

13. Different methods of instruction will result in no differences in the rates with which short and long passages are read.

This hypothesis was rejected. Data bearing upon this hypothesis are found in Tables 8 and 10. As previously indicated, Table 8 reveals significant differences over other treatment methods in favor of the paperback scanning method, as measured by the 30-word passages in the _Van Wagenen Rate of Comprehension Test_. Table 10 reveals similar results on the 3,000-word passage of the _Robinson-Hall Reading Test of History_.

Summary

Using four statistical techniques, the investigator tested thirteen hypotheses related to increased reading effectiveness. The major statistical technique was the analysis of covariance. Where significant F values were found at the .01 level of confidence, the t-test was applied. The fourth statistic used was the product-moment coefficient of correlation.

In analyzing the data, the investigator found that all methods produced significant gains in reading rate, with the results of the paperback scanning method being significantly superior to the results of any of the other methods (e.g., controlled pacing, controlled reader, and tachistoscope). This finding appeared on measuring instruments composed of 30-word passages and a 3,000-word passage.

While increased reading rate resulted from all methods, there was no significant change in the average level of comprehension during the six weeks of instruction.

When the investigator tested the retention of gains in reading rate eight weeks after completion of instruction, it was found that no significant change had occurred since the instruction ended. Students appeared to have maintained their newly acquired gains in reading rate.

In determining the effects of increased reading rate on flexibility, the findings indicated that, at the .01 level of confidence, reading flexibility increased through three of the four methods. However, none of these increases in flexibility were significantly different from another.

CHAPTER V

DISCUSSION AND RECOMMENDATIONS AND IMPLICATIONS

The major purpose of this study was to test thirteen hypotheses related to reading effectiveness. These hypotheses were built on a hierarchical structure which required the rejection of prior hypotheses in order to test related hypotheses. For example, because there were no gains in reading comprehension, it was not possible to test retention of gains in reading comprehension. Four of the thirteen hypotheses proved to be untestable for this reason.

Findings indicated that gains were made and retained in rate by the four experimental groups each instructed by a different method; gains in flexibility were made and retained by three of the four groups. Findings further indicated that the paperback scanning method produced significantly superior results on the rate of reading short and long passages in comparison with other methods, and that these results were retained when checked eight weeks later. No significant differences were found among the mean scores on flexibility achieved by the three experimental groups that made significant gains in flexibility. These findings are discussed in this chapter, along with recommendations for further research. The chapter closes with a section relating the implications of these findings to educational practices.

Limitations

The findings of this study need to be viewed in the light of certain limitations:

1. The Robinson-Hall Reading Test of History had only two forms; as a result, no form was available for a post-post test.
2. Publishers of the Robinson-Hall Reading Test gave no reliability for the comprehension portion.
3. The eight-week interval to determine retention of gains may be viewed as a relatively short interval.
4. Students in the experimental population were enrolled in the Improvement of Learning course during the entire study, which may have influenced the results.

Conclusions

The first and third hypotheses, which stated that no gains in reading rate and flexibility would result from any of four different methods of instruction, were rejected. Significant gains in rate were made as a result of all methods on two measuring instruments. Significant gains in flexibility were made as a result of all methods except the tachistoscopic. The second hypothesis, which stated that no gains in reading comprehension would result from any of four different methods, was accepted. The fact that none of the groups either gained or lost in comprehension is surprising. Taylor claims, for example, that a major value of the tachistoscope is in the improvement of comprehension.[1] On the other hand, Liddle[2] found a loss in comprehension resulting from a method similar to the paperback scanning. It seems possible that the effect of the experimental methods on comprehension may have been caused by the design, which placed eight weeks of practice in increasing reading rate within the context of a 16-week course emphasizing comprehension, vocabulary, and study skills.

---

[1] Taylor, _Speed Reading: Practices and Procedures_, p. 83.

[2] Liddle, _op. cit._

The fact that no significant changes were found in the pre and post-test comprehension scores of any of the experimental groups appears to refute the widely held belief that increased reading rate results in decreased reading comprehension. However, it must be noted that the tests used in this study measured comprehension of details primarily; therefore, it cannot be assumed that increases in rate of reading will have no effect on other kinds of comprehension.

On this point, attention must also be given to the fact that questions on details comprised both the comprehension tests given after the reading of the instructional material and the comprehension portion of the standardized tests used to determine comprehension level. If these tests on the instructional material had been designed to increase comprehension, rather than merely to provide the reader with an indication of the amount of information he obtained, the comprehension level might have increased as measured by the standardized tests.

When rate of reading was measured by the Robinson-Hall Reading Test, the control group as well as the treatment groups made significant gains between pre- and post-testing. This was the only instance in which the control group showed post-test gains. This test is composed of a 3,000-word passage. Why the control group gained in mean reading rate on this test and not on the Van Wagenen Test, composed of 30-word passages, is inexplicable.

The gain in flexibility was anticipated, for the more rapidly the student is able to read, the greater is his potential for flexibility. The reader who can skim some materials at 1,000 words a minute may read other material at 200 words a minute, whereas the reader whose top range is 250 words a minute has a limited range.

Support for the view that the more rapidly the student is able to read the greater his potential for flexibility comes from the findings of gains in rate made through the four treatment methods. Although all four methods produced significant gains in rate, the smallest amount of gain was produced through the tachistoscopic method, as indicated by both instruments measuring rate. The finding that the tachistoscopic method produced the smallest amount of gain in rate may account for the fact that the tachistoscopic group made no significant gains in flexibility at the .01 level of confidence, although at a less conservative level gains may be observed.

The fourth and sixth hypotheses, which stated that there would be no retention of gains in reading rate and reading flexibility resulting from any of four different methods of instruction, were rejected. The fifth hypothesis, which stated that there would be no retention of gains in reading comprehension resulting from any of four different methods of instruction, was untestable, since no gains in comprehension were made. Although the retention of gains shown by all the experimental groups is encouraging, one must recognize that eight weeks is a relatively short interval. Moreover, during this interval the experimental groups continued in the Improvement of Learning course. Even though reading and study skills other than rate were emphasized in this course, it must be assumed that this instruction and practice were supportive of maintenance of gains.

The seventh hypothesis, which stated that there would be no differences in gains in reading rate resulting from different methods of instruction, was rejected. In thirteen comparisons of mean scores on two measuring instruments, significant differences at the .01 level of confidence were found favoring the paperback scanning method. Although the paperback scanning method was the only one to attain a significant difference over another method, a rank order was nonetheless observed. On the Van Wagenen Rate of Comprehension Test, the paperback scanning method was followed by the controlled reader, controlled pacing, and tachistoscopic methods, in that order. The control group showed no significant difference.

This rank order appears to have a logical basis, particularly when considering factors such as transfer and purpose of each method. For example, it seems reasonable to assume that, because of the effects of transfer, reading rate would increase most readily when practice was done with books rather than with films. On this basis, one might have anticipated the superiority of the controlled pacing method over the controlled reader method; however, although the reverse is true, the seven-word difference between these two methods is within the test's fifteen-word error of measurement. All methods produced results superior to the control group, but when verbal aptitude was held constant only the paperback scanning method was significantly superior and when math aptitude was held constant only the paperback scanning and controlled reader methods were significantly superior.

On the Robinson-Hall Reading Test of History, which was the second instrument used to measure gain in reading rate, the anticipated rank order of paperback, controlled pacing, controlled reader, and tachistoscope appeared. On this measuring instrument, the paperback scanning method was significantly superior to the controlled reader and tachistoscope methods but not to the controlled pacing method. This finding appears to support the view that teaching reading in actual book materials may result in more gains than when using filmstrips. Although all methods produced results superior to the control group, only the paperback scanning method was significantly superior when both verbal and math aptitude were held constant.

The eighth hypothesis, which stated that there would be no differences in gains in reading comprehension resulting from different methods of instruction, was untestable, since it was contingent on the rejection of a prior hypothesis, which was accepted.

The ninth hypothesis, which stated that there would be no differences in gains in reading flexibility resulting from different methods of instruction, was accepted. No method produced significantly superior results in reading flexibility, at the .01 level of confidence. However, at a less conservative level, an indication of differences exists.

The tenth hypothesis, which stated that there would be no differences in retention of gains in reading rate resulting from different methods of instruction, was rejected. It is interesting to observe that, although all changes remained within the test's fifteen-word error of measurement, the control group was the only group showing a loss, while the treatment groups all showed gains.

The eleventh and twelfth hypotheses, which stated that there would be no differences in retention of gains in reading comprehension and reading flexibility resulting from different methods of instruction, were untestable, since no gains were made in reading comprehension and gain differences were not found in reading flexibility.

The thirteenth hypothesis, which stated that different methods of instruction would result in no differences in the rates with which short and long passages are read, was rejected. A reason for including this hypothesis was to obviate the possibility of a particular method having the effect of teaching for the testing instrument. This hypothesis was also included to determine if one method might produce superior results in both short and long passages. The paperback scanning method appeared to be significantly superior over all other methods on the two different types of measuring instruments.

Implications for Educational Practices

Implications for designing a program of reading and study skill development may be derived from this investigation. Since students seem to like the idea of increasing their reading rate, it may be psychologically advantageous to begin a program with emphasis on this particular skill. Nearly all students can see a marked increase in a relatively short time. The development of an increased reading rate allows an entrance into other areas, such as study skills. For example, to use the SQ3R reading-study skill formula,[1] students must be able to skim. From this point, the instructor may move into a variety of areas, depending upon student need.

Findings indicated that reading rate may be increased through any of the four methods used in this investigation; however, the increase made through the paperback scanning method was significantly superior to the increase made through the Controlled Reader, Controlled Pacing, and Tachistoscopic methods. This finding, however, should not imply ruling out the use of these latter methods, for certain individuals may learn better through one or a combination of them. In addition, it must be borne in mind that the methods considered are group pacing methods, and there may be individuals who would profit more from individual pacing methods. Student-teacher cooperation in determining the best method or combination of methods may heighten the learning experience.

---

[1] Francis P. Robinson, Effective Study (New York: Harper and Brothers, 1946).

The fact that the paperback scanning method produced the most significant results over the other methods has a number of implications for educational practices. Of all the methods, the paperback scanning allows for the greatest amount of reading. The training material is or can be more closely related to material read normally. The cost of the paperback scanning method is far less than the other methods. Virtually no upkeep is required; teachers need not concern themselves with the possibility of burned-out bulbs or short circuits. Cost of replacing 30 copies each of 6 titles would amount to approximately $100 every two or three years.

The work of teachers interested in increasing the reading effectiveness of their students may be coordinated through a reading specialist, who might conduct a program to familiarize reading teachers with these methods and with the latest research on increasing rate, comprehension, and flexibility. A peripheral benefit of such a program would be a greater understanding of claims made by commercial reading programs.

Recommendations for Further Research

1. Although significant differences were found in comparing group results of one method with another, little is known about individual performances within methods. Did certain individuals, for instance, make significant mean increases within methods that showed no mean increase? If so, might personality interaction with method account for this anomaly? An investigation of personality interaction with instructional methods is needed.
2. An investigation of the time variable in reading rate instruction is also needed. For how many weeks should instruction in reading rate be continued? How often should sessions be held during these weeks? How long should each session be? What interaction might there be between individual differences and various facets of the time variable?
3. More needs to be known about the nature of reading flexibility. Would a time-limit test

produce different results than a power test, such as was used in this study to test flexibility? What happens when variables such as readability level, student background as well as purpose, are held constant? What is the best way to teach flexibility?

4. Can comprehension skills be developed although not directly emphasized? That is, if exercises following the reading of passages are more related to the development of specific comprehension skills, such as main idea, or details, or inferences, might the level of comprehension related to one or more of these specific skills be changed?

5. The precise contributions made by each method merit investigation. In addition to increasing reading rate, what other skills are developed by the controlled reader, controlled pacing, tachistoscopic, and paperback scanning methods? Do one or more of these methods, for example, produce increases in vocabulary, or organizational skills?

6. What will happen to the retention gains after one year? Two years? Three years when these students are seniors? Is there any relationship between the gains of reading rates of these students and their class standing?

APPENDICES

APPENDIX A

LIST OF MATERIALS USED IN THE INVESTIGATION

Learning Through Seeing Classroom Kit VII (RK-7) and filmstrip projector
Sunland, California 91040

Educational Developmental Laboratories Controlled Reader
Set IJ (filmstrips)
Set IJ (study guides)
Huntington, New York

Paperback Books: (listed in order of their use in the study)
A Family Party, John O'Hara (Bantam Books, Inc., 271 Madison Aveune, New York, N.Y. 10017)
Albert Einstein, Arthur Beckhard (Avon Book Division, 959 Eighth Avenue, New York, N.Y. 10019)
The Red Pony, John Steinbeck (Bantam Books, Inc.)
Anthem, Ayn Rand (Signet Books, 501 Madison Avenue, New York, N.Y. 10022)
Hangrope Town, Harry Whittington (Ballantine Books, Inc., 101 Fifth Avenue, New York, N.Y. 10003)
A Separate Peace, John Knowles (Dell Publishing Co., Inc., 750 Third Avenue, New York, N.Y. 10017)
-- in addition, six other titles for transfer reading material.

Duplicated quizzes based upon passages in the [illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]

[illegible]
[illegible]

[illegible]

[illegible]

[illegible]

APPENDIX B

LESSON PLANS

Appendix B contains the lesson plans that were followed for the entire study. The only deviation from the plans that the study made is in the elimination of the *Nelson-Denny Reading Test*, which was included upon the request of the instructors for an instrument of this kind to be used at the beginning and end of the semester.

FOR ALL GROUPS: September 20 (Monday) Session 1

ORIENTATION TO IMPROVEMENT OF LEARNING

Call the roll

Distribute questionnaires
- ask to complete

When questionnaires are completed, or if sufficient time has elapsed, mention briefly pertinent regulations of the university and of the course (e.g., nine absences = F, etc.)

Mention that this is primarily a skill course and, as a result, most of the work is done in class; consequently, for improvement good attendance is imperative.

Introduce self briefly

Introduce course: Improvement of Learning
- cover four major areas: speed, comprehension, vocabulary, study skills
- mention intent to give individual attention and to have each one working in the area that is of most value to him, primarily toward the end of course.
- mention courses of this type are becoming more and more popular in schools and industry
- everyone can improve

Remedial Readers/	Corrective Readers/	Developmental Readers
1 - 5%	30 - 35%	60 - 65%

Mention experiment briefly
- please read or say in own words:

"Following the week of pre-testing, all of the General Education sections will be participating in an experiment relating to reading. You will be told more about this experiment at a later date. By the end of the semester, all of the sections will have covered the same material, but some of the sections will have learned this material through different methods and at different times."

Another requirement, to be elaborated upon next week, is an individual conference at the Reading Center.

Grading: as objective as possible
- vocab quizzes (9)
- quizzes on *How to Study in College*
- tentative mid-term
- final exam
- classwork
- folder

"Are there any questions? Comments?"

Distribute *Checklist for the Improvement of Study* - (ditto)
- discuss, as time permits

Remind about textbooks needed, as well as folder needed
Remind to leave questionnaires on front desk as they leave.

FOR ALL GROUPS: September 22 (Wednesday) Session 2

Any problem in obtaining textbooks?
- bring all three again, each session, until further notice

Any problem in obtaining folder?
- remind to write name on own folder so all may be collected at session's end--(if old folders are available, might mention)
- mention that, at start of each session, each should take his own folder

Remind again, for notebook, either a notebook or papers in folder

Call roll

Re-mention pre-tests and why

Van Wagenen Rate of Comprehension Test - (Form D)
- actual working time: 4 minutes
- collect when time ended

Robinson-Hall Reading Test of History - (Canada)
- actual reading time: 10 minutes - (have students note position at end of three, six, and ten minutes) - (give sufficient time for the slowest to complete questions up to where he read)
- collect

Distribute answer sheets for 30-day pre-test
- distribute 30-day pre-test of 50-words
- do
- collect

Remind to continue bringing three textbooks

Remind to leave pre-tests, answer sheets, and folders at front as they leave.

FOR ALL GROUPS: September 24 (Friday) Session 3

Call roll

Remind to continue bringing three textbooks

Braam-Sheldon Flexibility of Reading Pre-Test - (Form 1)
- introduce and distribute answer sheets
- Ask class to NOT WRITE on mimeographed tests being distributed
- page through the mimeographed pages
- mention that, if a passage and questions are completed while others are still working, might care to look over Developing Efficient Reading - page 18, vocabulary pre-test, which has answers on page 21.
- before each pre-test, read the purpose in the manual
- do the five pre-test passages
  - (REMIND CLASS TO NOT WRITE ON TEST) -

- complete information in box on page 17
  - discuss briefly
- might complete graph on page 18 and discuss briefly

- distribute long half sheets to record wpm and comprehension for each passage, etc. - do together

Remind to leave long half sheets and answer sheets and mimeographed tests as they leave.

ALL GROUPS September 27 - (Monday) Session 4

Call roll

Mention that next session will begin making appointments for individual conferences with instructor at Reading Center; might, before then, prepare to indicate appointment time

Nelson-Denny Reading Test - (Form A)
- distribute answer sheets
- distribute test booklets
- explain briefly and begin: vocabulary - 10 minutes
  speed - 1 minute and continue on for 19 minutes for comprehension
- collect answer sheets and test booklets

Discussion and clarification of previous pre-tests
- distribute Van Wagenen
  - discuss briefly
- distribute Robinson-Hall
  - discuss briefly
- distribute long sheets for Braam-Sheldon
  - discuss briefly

  ON LONG SHEETS, HAVE STUDENTS PREDICT BRAAM-SHELDON POST-TEST SCORES.

Distribute student speed of reading and comprehension charts - write names on charts
- have students record: first Braam-Sheldon five pre-test scores (wpm and comp)
- : then Van-Wagenen scores
- : then Robinson-Hall scores

Collect student speed of reading and comprehension charts
long sheets for Braam-Sheldon
Robinson-Hall material
Van Wagenen material

Remind class, also, to leave folders and to think about a time they can come to visit the Reading Center.

ALL GROUPS September 29 - (Wednesday) Session 5
(Mop-up Session)

Call roll

Mention about individual conferences with instructor at Reading Center;
Might begin to make appointments via sheet passed around.

Mention this day will discuss the pre-tests and introduce the method of instruction.

Discussion and clarification of previous pre-tests
- distribute Van Wagenen
  - discuss briefly
- distribute Robinson-Hall
  - discuss briefly
- distribute long sheets for Braam-Sheldon
  - discuss briefly

  ON LONG SHEETS FOR BRAAM-SHELDON, HAVE STUDENTS PREDICT BRAAM-SHELDON POST-TEST SCORES AND HAVE STUDENTS ALSO RECORD SCORES THEY'D LIKE TO MAKE

Distribute student speed of reading and comprehension charts - write names on charts
- have students record: first Braam-Sheldon five pre-test scores (wpm and comp)
- : then Van Wagenen scores
- : then Robinson-Hall scores

Collect student speed of reading and comprehension charts
- long sheets for Braam-Sheldon
- Robinson-Hall material
- Van Wagenen material

Introduce method of instruction --

- for controlled reader groups: use old film and show different speeds, etc. might show student books and mention that the book will give a brief introduction to the film, as well as a brief introduction to some of the vocabulary to be encountered. Then the film will be viewed, and then the students can respond to ten multiple choice questions. PLEASE REMIND STUDENTS THAT ALL WRITING WILL BE DONE IN THEIR OWN NOTEBOOKS OR SEPARATE SHEETS. Might mention that the film may be viewed a second time at a slower speed, after which they may re-do their questions and then the answers will be given.

- for controlled pacing groups: essentially the same as above, except for no machine. Might show books containing stories and indicate that the book will give a brief introduction to the story, as well as a brief introduction to some of the vocabulary encountered. Then the story will be read, using 3 x 5 cards and a metronome; might illustrate, perhaps. Then the students can respond to ten multiple choice questions. PLEASE REMIND STUDENTS THAT ALL WRITING WILL BE DONE IN THEIR OWN NOTEBOOKS OR SEPARATE SHEETS. Might mention that the story will be read a second time at a slower speed, after which they may re-do their questions and then the answers will be given.

- for paperback groups: might show the paperback books and indicate that the method will basically involve a pre-test, a countdown exercise, and a post-test. Might illustrate the countdown exercise, stressing it is to accustom the eyes to moving vertically more so than for understanding what is read, or, rather, on each page. AGAIN THE STUDENTS WILL NEED A NOTEBOOK OR SEPARATE SHEETS ON WHICH TO RECORD ANSWERS TO QUESTIONS.

- for tachistoscopic groups: might run through introductory filmstrip, which explains the four types of strips that will be used in this method. Might mention that there are four kinds of strips, and each session two strips (one of a kind) will be used, and the following session two more strips (of the other kinds) will be used, etc. AGAIN THE STUDENTS WILL NEED A NOTEBOOK OR SEPARATE SHEETS TO RECORD RESPONSES.

For all groups: Might mention that after the practice exercise there will be time remaining to read, using the skills learned, in paperback books. This will be done each session except the first session each week, during which time will be given a quiz on 30-Days to a More Powerful Vocabulary. These quizzes will be announced on the preceding Thursday or Friday; the first quiz will be this coming Monday on the first five chapters.

Remind class, also, to leave folders and sign-up sheet for appointments on the front desk as they leave.

For all groups: October 1 - (Friday) Session 6
(First training session)

Call roll

Remind about individual conferences with instructor at Reading Center

Remind about vocabulary quiz Monday on chapters 1 through 5 in *30 Days*.

Distribute rate charts belonging to each student
- remind that they are to be kept up to date
- need keep gross reading rate (wpm) only

For Controlled Reader Groups:
Do Film 1 as indicated in book:
Mention purpose: "read to answer questions about the material."

1. Preview or Introductory Reading
2. Vocabulary study
3. Controlled Reading - 150 wpm.
4. Comprehension check *on separate sheets* (do not do second time yet)
5. Give answers
6. Collect books
7. Have scores recorded on rate charts
8. Have rate charts placed in folders
9. Distribute books for transfer reading (*A Family Party* or *Einstein*)
10. Have students leave folders and books as they leave.

For Controlled Pacing Groups:
Do Story 1 as indicated in book:
Mention purpose

1. Preview or Introductory Reading
2. Vocabulary study
3. Controlled Pacing with 3 x 5 cards and metronome (set comparable to 150 wpm)
4. Comprehension check *on separate sheets* (do not do second time)
5. Give answers
6. Collect books
7. Have scores recorded on rate charts
8. Have rate charts placed in folder
9. Distribute books for transfer reading (*A Family Party* or *Einstein*)
10. Have students leave folders and books as they leave.

For Paperback Groups:
Use A FAMILY PARTY
(approx. 225 words/page)
Mention purpose

1. Introduce the novel and novelist
2. Vocabulary words
3. Five-minute pre-test of reading rate
4. Comprehension check *on separate sheets*
5. Countdown exercise from 8 to 2 to 10
6. Five-minute post-test of reading rate
7. Comprehension check
8. Have scores recorded on rate charts
9. Have rate charts placed in folder
10. Distribute books for transfer reading (*Hiroshima* or *The Great Imposter*)
11. Have students leave folders and books as they leave.

For Tachistoscopic Groups:
Mention purpose

1. Do Film 1 from Seeing Skills
2. Do Film 1 from Word Mastery
3. Distribute books for transfer reading (*A Family Party* or *Einstein*)

For all groups: October 4 - (Monday) Session 7
(Second training session)

Call roll

Comment on individual conferences....

For Controlled Reader Groups:
Do Film 2 as indicated in book:

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material."
4. Controlled Reading - 180 wpm
5. Comprehension check *on separate sheets*
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab #1 quiz on separate answer sheets
11. Have students leave folders and books, etc., as they leave

[illegible]
[illegible]
[illegible]
[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

[illegible]
[illegible]
[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]

[illegible]
[illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

For all groups: October 6 - (Wednesday) Session 6
(Third viewing session)

Roll call

For Controlled Reading
Groups:
[illegible]
[illegible]

1. Preview of introductory reading
2. Vocabulary study
3. Motive question: "Read to answer questions about the material."
4. Controlled reading - [illegible] wpm
5. Comprehension check on separate sheets
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

For Controlled Viewing
Groups:
[illegible]
[illegible]

1. Preview of introductory reading
2. Vocabulary study
3. Motive question: "Read to answer questions about the material."
4. Controlled viewing [illegible]
5. Comprehension check on separate sheets
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

For Paperback Groups: [illegible]
(approx. 300 words/page)

1. Introduction
2. Vocabulary words
3. Motive purpose: "read to answer questions about the material."
4. Five-minute practice of reading rate
5. Comprehension check on separate sheets
6. [illegible] exercise from 8 to 9 to 9 or 10
7. Five-minute practice of reading rate
8. Comprehension check
9. Mark errors recorded on rate charts
10. Mark comp. [illegible] graph in [illegible]
11. Distribute books for transfer [illegible] (to [illegible] [illegible] or [illegible]a)
12. Have students take books out [illegible] home to read [illegible]

For [illegible] Groups:

1. Motive purpose: "read to answer questions about the material."
2. [illegible]
3. [illegible]
4. Distribute books for transfer [illegible] (to [illegible] [illegible] or [illegible]a)
5. Have students take books out [illegible] home to read [illegible]

[illegible] [illegible] [illegible]

[illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible] [illegible]a)
12. [illegible]

For Controlled Pacing Groups:
(Do Story 4 as indicated in book):

Assn: Quiz Monday on chapters 6, 7, and 8 in 30 Days

Might return papers from previous quiz.

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material."
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting: 72, with two clicks a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Great Imposter or Hiroshima)
11. Have students leave folders and books as they leave

For Paperback Groups:
Use Einstein
(approx. 300 words/page)

Assn: Quiz Monday on chapters 6, 7, and 8 in 30 Days

Might return papers from previous quiz.

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material."
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Great Imposter or Hiroshima)
12. Have students leave folders and books as they leave

For Tachistoscopic Groups:

Assn: Quiz Monday on chapters 6, 7 and 8 in 30 Days

Might return papers from previous quiz.

1. Mention purpose: "read to answer questions about the material"
2. Do Film 2 from Phrase Mastery
3. Do Film 2 from Reading Mastery
4. Distribute books for transfer reading (The Great Imposter or Hiroshima)
5. Have students leave folders and books as they leave

For all groups: October 11 - (Monday) Session 10
(Fifth Training Session)

Call roll

For Controlled Reader Groups:
(Do Film 5 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material."
4. Controlled Reading - 240 wpm
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab #2 quiz on separate sheets
11. Have students leave folders, books, etc.

For Controlled Pacing Groups
(Do Story 5 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material."
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting: 40, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab #2 quiz on separate sheets
11. Have students leave folders, books, etc.

For Paperback Groups:
Use EINSTEIN
(approx. 300 words/page)

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Vocab #2 quiz on separate sheets
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 3 from Seeing Skills
3. Do Film 3 from Word Mastery
4. Vocab #2 quiz on separate sheets
5. Have students leave folders, books, etc.

For all groups: October 13 - (Wednesday) Session 11

Call roll

For Controlled Reader Groups:
(Do Film 6 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material."
4. Controlled Reading - 270 wpm.
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading
11. (*The Answer* or *The Red Badge of Courage*)
12. Have students leave folders, books, etc.

For Controlled Pacing Groups:
(Do Story 6 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary study
3. Mention purpose: "read to answer questions about the material"
4. Controlled pacing with 3 x 5 cards and metronome (metronome setting, 46, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Answer or The Red Badge of Courage)
11. Have students leave folders, books, etc.

For Paperback Groups:
Use THE RED PONY
(approx. 300 words/page)

1. Introduction of novel and novelist
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Answer or The Red Badge of Courage
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 3 from Phrase Mastery
3. Do Film 3 from Reading Mastery
4. Transfer reading (Answer or Red Badge); collect all

For all groups: October 15 - (Friday) Session 12
(Seventh Training Session)

Call roll

For Controlled Reader
Groups:
(Do Film 7 as indicated
in book):

Assn: Quiz Monday on
chapters 10 and 11
in 30 Days

Might return papers
from previous quiz

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Reading - 300 wpm
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Answer or The Red Badge of Courage)
11. Have students leave folders, books, etc.

For Controlled Pacing
Groups:
(Do Story 7 as indicated
in book):

Assn: Quiz Monday on
chapters 10 and 11
in 30 Days

Might return papers
from previous quiz

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting, 50, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Answer or The Red Badge of Courage)
11. Have students leave folders, books, etc.

For Paperback Groups:
Use THE RED PONY
(approx. 300 words/page)

Assn: Quiz Monday on chapters 10 and 11 in 30 Days

Might return papers from previous quiz

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-tests of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Answer or The Red Badge of Courage)
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

Assn: Quiz Monday on chapters 10 and 11 in 30 Days

Might return papers from previous quiz

1. Mention purpose: "read to answer questions about the material"
2. Do Film 4 from Seeing Skills
3. Do Film 4 from Word Mastery
4. Transfer reading (Answer or Red Badge)
5. Have students leave folders, books, etc.

For all groups: October 18 - (Monday) Session 13
(Eighth Training Session)

Call roll

For Controlled Reader Groups:
(Do Film 8 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Reading - 320 wpm
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab #3 quiz on separate sheets
11. Have students leave folders, books, etc.

For Controlled Pacing Groups: (Do Story 8 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting, 54, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab #3 quiz on separate sheets
11. Have students leave folders, books, etc.

For Paperback Groups: Use THE RED PONY (approx. 300 words/page)

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Vocab #3 quiz on separate sheets
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 4 from Phrase Mastery
3. Do Film 4 from Reading Master
4. Vocab #3 quiz on separate sheets
5. Have students leave folders, books, etc.

For all groups: October 20 - (Wednesday) Session 14
(Ninth Training Session)

For Controlled Reader Groups:
(Do Film 9 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Reading - 360 wpm
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Red Badge of Courage or The Answer)
11. Have students leave folders, books, etc.

For Controlled Pacing Groups:
(Do Story 9 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting, 58, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Red Badge of Courage or The Answer)
11. Have students leave folders, books, etc.

For Paperback Groups:
Use ANTHEM
(approx. 200 words/page)

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Red Badge of Courage or The Answer)
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 5 from Seeing Skills
3. Do Film 5 from Word Mastery
4. Distribute books for transfer reading (The Red Badge of Courage or The Answer)
5. Have students leave folders, books, etc.

For all groups: October 22 - (Friday) Session 15
(Tenth Training Session)

For Controlled Reader Groups:
(Do Film 10 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Reading - 390 wpm.
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Red Badge of Courage or The Answer)
11. Have students leave folders, books, etc.

Assn: Quiz Monday on chapters 12 and 13 in 30 Days

Might return papers from previous quiz

For Controlled Pacing Groups:
(Do Story 10 as indicated in book):

Assn: Quiz Monday on chapters 12 and 13 in *30 Days*

Might return papers from previous quiz

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting: 63, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (*The Red Badge of Courage* or *The Answer*)
11. Have students leave folders, books, etc.

For Paperback Groups:
Use ANTHEM
(approx. 200 words/page)

Assn: Quiz Monday on chapters 12 and 13 in *30 Days*

Might return paper from previous quiz

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have rate scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (*The Red Badge of Courage* or *The Answer*)
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

Assn: Quiz Monday on chapters 12 and 13 in *30 Days*

Might return paper from previous quiz

1. Mention purpose: "read to answer questions about the material"
2. Do Film 5 from Phrase Mastery
3. Do Film 5 from Reading Mastery
4. Distribute books for transfer reading (*The Red Badge of Courage* or *The Answer*)
5. Have students leave folders, books, etc.

3

For all groups: October 25 - (Monday) Session 16
(Eleventh Training Session)

For Controlled Reader Groups: (Do Film 11 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Reading - 390 wpm.
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocabulary Quiz #4 on separate sheets
11. Have students leave folders, books, etc.

For Controlled Pacing Groups: (Do Story 11 as indicated in book):

1. Preview or Introductory Reading
2. Vocabulary Study
3. Mention purpose: "read to answer questions about the material"
4. Controlled Pacing with 3 x 5 cards and metronome (metronome setting: 66, with one click a line)
5. Comprehension check on separate sheets
6. Give answers
7. Collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocabulary Quiz #4 on separate sheets
11. Have students leave folders, books, etc.

For Paperback Groups:
Use ANTHEM
(approx. 200 words/page)

1. Introduction
2. Vocabulary words
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Vocabulary Quiz #4 on separate sheets
12. Have students leave folders, books, etc.

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 6 from Seeing Skills
3. Do Film 6 from Word Mastery
4. Vocabulary Quiz #4 on separate sheets
5. Have students leave folders, books, etc.

For all groups: October 27 - (Wednesday) Session 17
(Twelfth Training Session)

For Controlled Reader Groups:
(Do Film 12 as indicated in book):

1. Review Film 11 at previous session speed
2. Preview or Introductory Reading of Film 12
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Reading: 420 wpm.
6. Comprehension check on separate sheets
7. Give answers
8. Collect books
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (Pippin or The Long March)
12. Have students leave materials

For Controlled Pacing Groups: (Do Story 12 as indicated in book):

1. Review Story 11 at previous session speed
2. Preview or Introductory Reading of Story 12
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 72, with one click a line
6. Comprehension check on answer sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (*Pippin* or *The Long March*)
11. Have students leave materials

For Paperback Groups: Use HANGROPE TOWN (approx. 250 words/page

1. Introduction
2. Vocabulary
3. Mention purpose:"read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (*Pippin* or *The Long March*)
12. Have students leave materials

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 6 from Phrase Mastery
3. Do Film 6 from Reading Mastery
4. Distribute books for transfer reading (*Pippin* or *The Long March*)
5. Have students leave materials

For all groups: October 29 - (Friday) Session 18
(Thirteenth Training Session)

For Controlled Reader Groups:
(Do Film 13 as indicated in book):

Assn: Quiz Monday on chapters 14 thru 17 in 30 Days

1. Review Film 12 at previous session speed
2. Preview or Introductory Reading of Film 13
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Reading: 450 wpm
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (Pippin or The Long March)
11. Have students leave materials

For Controlled Pacing Groups:
(Do Story 13 as indicated in book):

Assn: Quiz Monday on chapters 14 thru 17 in 30 Days

1. Review Story 12 at previous session speed
2. Preview or Introductory Reading of Film 13
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 76, with one click a line
6. Comprehension check on answer sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (Pippin or The Long March)
11. Have students leave materials

For Paperback Groups:
Use HANGROPE TOWN
(approx. 250 words/page)

Assn: Quiz Monday on
chapters 14 thru
17 in 30 Days

1. Introduction
2. Vocabulary
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test of reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (Pippin or The Long March)
12. Have students leave materials

For Tachistoscopic Groups:

Assn: Quiz Monday on
chapters 14 thru
17 in 30 Days

1. Mention purpose: "read to answer questions about the material"
2. Do film 7 from Seeing Skills
3. Do film 7 from Word Mastery
4. Distribute books for transfer reading (Pippin or The Long March)
5. Have students leave materials

For all groups: November 1 - (Monday) Session 19
(Fourteenth Training Session)

For Controlled Reader Groups:
(Do Film 14 as indicated in book):

1. Review Film 13 at previous session speed
2. Preview or Introductory Reading of Film 14
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled reading: 480 wpm.
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab Quiz #5 on separate sheets
11. Have students leave materials

For Controlled Pacing Groups:
(Do Story 14 as indicated in book):

1. Review Story 13 at previous session speed
2. Preview or Introductory Reading of Story 14
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 80, with one click a line
6. Comprehension check on answer sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab Quiz #5 on separate sheets
11. Have students leave materials

For Paperback Groups:
Use HANGROPE TOWN
(approx. 250 words/page)

1. Introduction
2. Vocabulary
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test on reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Vocab Quiz #5 on separate sheets
12. Have students leave materials

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 7 from Phrase Mastery
3. Do Film 7 from Reading Mastery
4. Vocab Quiz #5 on separate sheets
5. Have students leave materials

For all groups: November 3 - (Wednesday) Session 20
(Fifteenth Training Session)

For Controlled Reader Groups:
(Do Film 15 as indicated in book):

1. Review Film 14 at previous session speed
2. Preview or Introductory Reading
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Reading: 510 wpm.
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (*The Long March* or *Pippin*)
11. Have students leave materials

For Controlled Pacing Groups:
(Do Story 15 as indicated in book):

1. Review Story 14 at previous session speed
2. Preview or Introductory Reading of Story 15
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 84, with one click a line
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (*The Long March* or *Pippin*)
11. Have students leave materials

For Paperback Groups:
Use A SEPARATE PEACE
(approx. 250 words/page)

1. Introduction
2. Vocabulary
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test on reading rate
5. Comprehension check on separate answer sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Long March or Pippin)
12. Have students leave materials

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 8 from Seeing Skills
3. Do Film 8 from Word Mastery
4. Distribute books for transfer reading (The Long March or Pippin)
5. Have students leave materials

For all groups: November 5 - (Friday) Session 21
(Sixteenth Training Session)

For Controlled Reader Groups:
(Do Film 16 as indicated in book):

Assn: Quiz Monday on chapters 18 and 19 in 30 Days

1. Review Film 15 at previous session speed
2. Preview or Introductory Reading of Film 16
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Reading: 510 wpm (same as last time)
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Long March or Pippin)
11. Have students leave material

For Controlled Pacing Groups:
(Do Story 16 as indicated in book):

Assn: Quiz Monday on chapters 18 and 19 in 30 Days

1. Review Story 15 at previous session speed
2. Preview or Introductory Reading of Story 16
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 84, with one click a line (same as last time)
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Distribute books for transfer reading (The Long March or Pippin)
11. Have students leave materials

For Paperback Groups:
Use A SEPARATE PEACE
(approx. 250 words/page)

Assn: Quiz Monday on chapters 18 and 19 in 30 Days

1. Introduction
2. Vocabulary
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test on reading rate
5. Comprehension check on separate sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Distribute books for transfer reading (The Long March or Pippin)
12. Have students leave materials

For Tachistoscopic Groups:

Assn: Quiz Monday on chapters 18 and 19 in 30 Days

1. Mention purpose: "read to answer questions about the material"
2. Do Film 8 from Phrase Mastery
3. Do Film 8 from Reading Mastery
4. Distribute books for transfer reading (The Long March or Pippin)
5. Have students leave materials

For all groups: November 8 - (Monday) Session 22
(Seventeenth Training Session)

For Controlled Reader Groups:
(Do Film 17 as indicated in book):

1. Review Film 16 at previous session speed
2. Preview or Introductory Reading of Film 17
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Reading: 540 wpm
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab Quiz #6 on separate sheets
11. Have students leave materials

For Controlled Pacing Groups:
(Do Story 17 as indicated in book):

1. Review Story 16 at previous session speed
2. Preview or Introductory Reading of Story 17
3. Vocabulary Study
4. Mention purpose: "read to answer questions about the material"
5. Controlled Pacing: 92, with one click a line
6. Comprehension check on separate sheets
7. Give answers and collect books
8. Have scores recorded on rate charts
9. Have rate charts placed in folders
10. Vocab Quiz #6 on separate sheets
11. Have students leave materials

For Paperback Groups:
Use A SEPARATE PEACE
(approx. 250 words/page)

1. Introduction
2. Vocabulary
3. Mention purpose: "read to answer questions about the material"
4. Five-minute pre-test on reading rate
5. Comprehension check on separate sheets
6. Countdown exercise from 8 to 2 to 8 or 10
7. Five-minute post-test of reading rate
8. Comprehension check on rate charts
9. Have scores recorded on rate charts
10. Have rate charts placed in folders
11. Vocab Quiz #6 on separate sheets
12. Have students leave materials

For Tachistoscopic Groups:

1. Mention purpose: "read to answer questions about the material"
2. Do Film 9 from Seeing Skills
3. Do Film 9 from Word Mastery
4. Do Film 9 from Phrase Mastery
5. Do Film 9 from Reading Mastery
6. Vocab Quiz #6 on separate sheets
7. Have students leave materials

FOR ALL GROUPS November 10 - (Wednesday) Session 23

Van Wagenen Rate of Comprehension Test - (Form C) (PLEASE USE STOP WATCHES)
- actual working time: 4 minutes
- collect when time ended

Robinson-Hall Rate of Comprehension Test - (Russia)
- actual reading time: 10 minutes - (have students note position at end of three, six, and ten minutes) - (give sufficient time for the slowest to complete questions up to where he read)
- collect

Give Vocab Quiz #6
- collect

FOR ALL GROUPS November 12 - (Friday) Session 24

Braam-Sheldon Flexibility of Reading Post-Test - (Form 2)
- introduce and distribute answer sheets
- ask class to NOT WRITE on mimeographed tests being distributed
- page through the mimeographed pages
- mention that, if a passage and questions are completed while others are still working, might care to look over Developing Efficient Reading - pages 116 to 120 (dealing with vocabulary)
- before each post-test, read the purpose in the manual
- do the five post-test passages

  --(REMIND CLASS TO NOT WRITE ON TEST)--
- give answers to comprehension (multiple choice) questions
- complete information in box on page 115
  - discuss briefly
- distribute long half sheets belonging to each student to record wpm and comprehension for each passage, etc.
  - collect the long half sheets
  - collect the answer sheets and the tests, etc.

Assn: Vocabulary Quiz Number 7 on Monday or Wednesday

FOR ALL GROUPS November 15 - (Monday) Session 25

PLEASE NOTIFY ANY ABSENT FOR POST-TESTING TO DO THE TESTS AS SOON AS POSSIBLE

If you wish, explain the study briefly, but please DO NOT mention anything about checking (post-post-testing) for retention gains. Might mention that those who make an effort to continue to apply skills continue to improve; those who do not, do not - and leave it at that.

Might care to show the different materials used by the other groups, briefly explaining each.

Please ask the students to write anonymous reactions to the training in speed. Ask them to include comments on the value, the length of training, the material or equipment used, good and bad points, if they reached their anticipated improvement, etc.
- please collect

If time, Vocab Quiz Number 7....

FOR ALL GROUPS Remaining Sessions

For remaining sessions, please avoid any work with speed; in place, might continue the vocabulary quizzes, comprehension (un-timed) exercises in Braam-Sheldon Developing Efficient Reading, Pauk's How to Study in College, Herber's THIMK, the cloze materials, work on propaganda and critical reading, etc.

Post-post Testing is scheduled for January 5 and 7.

THANK YOU FOR ALL YOUR HELP!!!

al

APPENDIX C

QUIZZES BASED ON PASSAGES IN PAPERBACKS

Appendix C contains the quizzes based on passages in the paperbacks used for instructional purposes in the paperback book method. Quizzes based on the material used in the Controlled Reader and Controlled Pacing methods may be found in the Controlled Reader Study Guide (IJ).

On a separate answer sheet, respond to the following items relating to . . .

A FAMILY PARTY pages 13 through 26

1. The town was formerly an important_________________.

2. The name of the town was __________________________.

3. The man being honored had kept his job for_____years.

4. The man being honored distinguished himself the night of_________________.

5. The speaker's father once had a newspaper called the ___________________.

6. The man being honored at the party was Sam__________.

7. Sam was among the first to arrive at the accident because____________________________________.

8. Sam drove a ___________________.

9. While Sam was helping at the wreck, someone___________ ___________________.

10. From the passage read, it appears that the speaker is ____________________.

On a separate answer sheet, respond to the following items relating to . . .

A FAMILY PARTY pages 61-90

1. In 1918, the town had______________________________.
2. Shortly afterwards, Sam began to collect money for ________________________.
3. About this time, the coal companies_________________.
4. Shortly afterwards, Sam was refused cooperation by ___________________________.
5. The new institution was eventually built in_________.
6. The name of Sam's wife was___________________________.
7. Sam was ______ years older than his wife.
8. Sam's wife died as a result of ______________________.
9. The death occurred over ________ years ago.
10. The party guests raised ______________ for the maternity ward.

On a separate answer sheet, respond to the following items relating to . . .

ALBERT EINSTEIN

Chapters 6 and 7 (and a little of 8) pages 52-70

1. Einstein had _____ children. (p. 52)
   a. two
   b. three
   c. four
   d. five

2. The one thing that did not seem to fit Einstein's Theory of Relativity was _______
   a. time
   b. motion
   c. light
   d. sound

3. The formula, $E = mc^2$ refers to __________(p. 56)
   a. the speed of light
   b. the speed of sound
   c. the relationship of matter and energy
   d. the atomic bomb

4. Einstein won the Nobel Prize in physics in _________(p. 57)
   a. 1920
   b. 1921
   c. 1922
   d. 1923

5. Einstein's first few years of marriage were_________(p. 60)
   a. unhappy
   b. happy
   c. empty
   d. full

6. In Switzerland, Einstein was offered a job as a_____(p. 62)
   a. clerk
   b. physicist
   c. lecturer
   d. teacher

7. What request did his sons make of him? (p. 64)
   a. to comb his hair
   b. to wear his uniform
   c. to spend more time with them
   d. to buy them birthday presents

8. Einstein's wife was ________(p. 67)
   a. rarely at home
   b. unhappy at home
   c. happy at home
   d. helpful in his work

9. Einstein and fellow scientists went to ________ to test the theory of the bending of light. (p. 69)
   a. America
   b. England
   c. France
   d. Russia

10. Einstein found love with __________(p. 70)
   a. Elsa
   b. Mileva
   c. Margot
   d. Ilse

On a separate answer sheet, respond to the following items relating to . . .

ALBERT EINSTEIN

Chapters 10 and 11
pages 94 to 117

1. First to suffer under Hitler were the ________.(p. 94)
   - a. Gypsies
   - b. Jews
   - c. Protestants
   - d. Catholics

2. Einstein's life was saved by ________. (p. 96)
   - a. Adler
   - b. Elsa
   - c. Margot
   - d. Ilse

3. Einstein accepted temporary sanctuary in __________. (p. 97)
   - a. Belgium
   - b. Sweden
   - c. Denmark
   - d. England

4. Later, Einstein accepted a position at ____________. (p. 98)
   - a. University of California
   - b. MIT
   - c. University of Chicago
   - d. Princeton University

5. Einstein was ________ by his students. (p. 101)
   - a. loved
   - b. feared
   - c. ridiculed
   - d. worshipped

6. He sometimes told a story by the great author, ______ (p. 103)
   - a. Emile Zola
   - b. Heinrich Heine
   - c. Anatole France
   - d. Dante Alighieri

7. The scientific knowledge of _________ might have won the war for Germany.
   - a. Adler
   - b. Bohr
   - c. Meitner
   - d. Millikan

8. Dr. Bohr smuggled scientific inromation to ________ (p. 108)
   - a. Einstein
   - b. Fermi
   - c. Hahn
   - d. Sziland

9. Scientists prevailed upon Einstein to ___________ (p. 109)
   - a. continue his work
   - b. contact the president
   - c. return to Germany
   - d. stop teaching and do more research

10. Following the explosion of the first atomic bomb, Einstein was __________with the ideas expressed by brass of the U.S. Army (p. 117)
   - a. happy
   - b. angry
   - c. disheartened
   - d. bored

On a separate answer sheet, respond to the following items relating to . . .

THE RED PONY pages 3 through 13

The story opens at ______ time. (p. 3)
a. breakfast
b. lunch
c. dinner
d. supper

Jody's father was a _______ man. (p. 4)
a. talkative
b. cruel
c. lazy
d. stern

Jody had _______ dogs. (p. 5)
a. two
b. three
c. four
d. five

On the way to school, Jody met how many friends? (p. 7)
a. one
b. two
c. three
d. four

Two years from now, on his twelfth birthday, Jody knew he would be given __________. (p. 8)
a. cartridges
b. pony
c. rifle
d. saddle

Jody's mother's name was _________. (p. 9)
a. Ruth
b. Alice
c. Sally
d. Sarah

Jody's mother was concerned that _________. (p. 9)
a. Jody might fall off the pony.
b. Jody might not do his chores.
c. Jody might not eat breakfast.
d. Jody might be late for school.

The red pony was obtained_________. (p. 11)
a. from a traveling horse salesman.
b. from a friend.
c. at an auction.
d. with a winning raffle.

The red pony was named ____________. (p. 12)
a. Caliban
b. Galiban
c. Gabilan
d. Cabilan

Jody's mother told him __________. (p. 13)
a. to eat supper
b. to attend to the wood box.
c. to come into the house.
d. to go to bed.

On a separate answer sheet, respond to the following items relating to . . .

JUNIUS MALTBY (in THE RED PONY paperback) (pages 95 through 104)

1. When Junius Maltby was 35 years old, he _________. (p. 95)
   a. became wealthy
   b. fainted
   c. married
   d. bought a pony

2. At that time, he owned _________ dollars. (p. 95)
   a. 200
   b. 300
   c. 400
   d. 500

3. He moved to the _________. (p. 96)
   a. Pleasures of Heaven
   b. Gates of Paradise
   c. Pastures of Heaven
   d. Gates of Pleasure

4. There, Junius Maltby lived with a woman who had ____ sons. (p. 96)
   a. two
   b. three
   c. four
   d. five

5. He married and he and his wife grew very _______. (p. 97)
   a. prosperous
   b. poor
   c. happy
   d. close together

6. Before his wife died, _______. (p. 98)
   a. she told Junius she loved him.
   b. she cursed Junius.
   c. she asked Junius to be good.
   d. she gave birth to a child.

7. To help with the farm work, Junius ________. (p. 100)
   a. hired an old man named Jakob
   b. bought a goat
   c. questioned his neighbors
   d. began to look for another wife

8. Junius' son was named ________. (p. 101)
   a. Louis
   b. John
   c. Bob
   d. Robbie

9. Junius was very ___________. (p. 103)
   a. happy
   b. sad
   c. tidy
   d. dull

10. Junius' neighbors looked forward to the day when ______. (p. 104)
   a. Junius would leave his home
   b. he would re-marry
   c. his son would go to school
   d. the hired man would leave

Comprehension questions to accompany
ANTHEM--Ayn Rand

pg. 11 The sin referred to in the first paragraph was the sin of
a. stealing
b. lying
c. speaking
d. writing

pg. 12 The story begins in a
a. jail cell
b. tunnel
c. house
d. detention home

pg. 13 The author's age is
a. forty years
b. thirty-one years
c. twenty-one years
d. fifty years

pg. 13 The words over the portals of the Palace of the World were cut in
a. steel
b. brick
c. granite
d. marble

pg. 14 The sentence for speaking of times before the Great Rebirth was
a. one year in detention
b. fifty lashes
c. three years in detention
d. death by hanging

pg. 15 All children lived in the Home of Infants until the age of
a. three
b. five
c. seven
d. fifteen

pg. 16 Children spent ____years in the Home of the Students.
a. eight
b. ten
c. fifteen
d. four

pg. 16 At the Home of the Students Equality 7-2521 was unhappy because
a. the learning was too easy
b. the correction was overly severe
c. the learning was too hard

pg. 17 Equality 7-2521 was lashed by his teacher because
a. he disobeyed the school regulations
b. he learned too slowly
c. he was different than the other students

pg. 18 The great Transgression of Preference mentioned, was the preference of
a. some lesson over others
b. some books over others
c. some fellow students over others

pg. 19 Equality 7-2521 was most interested in the study of
a. history
b. science
c. geography
d. sociology

pg. 20 At age fifteen the students were
a. tested to determine scholastic aptitude
b. tested to determine vocational aptitude
c. told which school of higher education to attend
d. told their vocations

pg. 21 Equality 7-2521 wished to become
a. a political scientist c. a carpenter
b. an artist d. a scholar

pg. 23 Equality 7-2521 was assigned to the position of
a. carpenter c. scientist
b. street-sweeper d. laboratory technician

pg. 24 The social recreation provided for the workers consisted of
a. sports c. television
b. plays d. motion pictures

pg. 25 All men were required to work until they reached the age of
a. forty c. sixty
b. fifty d. sixty-five

pg. 27 International 4-8818 was sent to the Home of the Street Sweepers because he
a. enjoyed science c. enjoyed art
b. enjoyed music d. enjoyed sports

pg. 28 While gathering papers and rags near the theatre, Equality 7-2521 and Internation 4-8818 found
a. a valuable carving c. an ancient manuscript
b. an iron bar d. a silver bar

pg. 30 The "tunnel" which Equality 7-2521 and International 4-8818 found was really an old deserted
a. cellar c. subway
b. bank vault d. bomb shelter

On a separate answer sheet, respond to the following items relating . . .

ANTHEM pp. 87 plus

1. Equality 7-2521 awoke in______________.
2. Food was obtained by________________.
3. Drink was obtained by________________.
4. For the first time, Equality saw________________.
5. On the second day, Equality saw________________.
6. To obtain food, Equality made__________________.
7. At night, Equality kept animals away by_______________.
8. After many days, Equality found_____________________.
9. Inside, they found_____________________________.
10. Equality decided______________________________.

On a separate answer sheet, respond to the following items relating to . . .

HANGROPE TOWN pages 5 to 13

1. The name of the town was__________________.

2. Handcuffed to the saddlehorn was Tom _____________.

3. The marshall's name was Curt___________________.

4. Tom's wife's name was ______________________.

5. Tom had gone to drink in________________________.

7. The leader of the group was _____________________.

8. The arrivers began_______________________________.

9. One man ran into the livery stable to get___________.

10. The marshall earned __________dollars a month.

On a separate answer sheet, respond to the following items relating to . . .

HANGROPE TOWN pages 83 to 96

1. Death came to ______________.
2. The man who ran from the scene of the crime looked like __________________.
3. The name of the witness was _________________.
4. The murder knife could be identified by its __________.
5. The murder suspect was lodged in Room # ______________.
6. The marshall told the suspect that if he resisted arrest he would___________________.
7. Earlier, Tom had gone somewhere with ________________.
8. To obtain information, the marshall visited __________.
9. The marshall learned that, a few years before, there had been a ___________________________.
10. Confessing to the murder was ________________________.

On a separate answer sheet, respond to the following items relating to . . .

A SEPARATE PEACE pages 5 to 13

1. The name of the school was__________________.

2. The story-teller revisited the school _____ years after his student days.

3. The month the story-teller revisited the school was______.

4. The school was located in the state of _______________.

5. The wide yard at the school was called the ___________.

6. The Field House was called _________________.

7. The story-teller was walking across the school grounds toward a ____________________.

8. Flashing back to his student days, the story-teller thinks of a person named ___________________.

9. The year was __________________.

10. The story-teller, in his mind, is now _____years old.

On a separate answer sheet, respond to the following items relating to . . .

A SEPARATE PEACE pages 189 to 203

1. When the story-teller returned to school, he longed to see ____________________.

2. The story-teller found the longed-for person in _______.

3. The story-teller was asked how their friend________was.

4. After dinner that same night a visit was made to the room of the boys by ______________________.

5. Phineas thought that the two most important "old men" in the world were _____________________.

6. In chapel, every day, there were announcements about what kind of program? _________________________.

7. One day, after chapel, the story-teller was cornered and upset by ________________.

8. When the story-teller returned from chapel, he found Finny in the dormitory blocking the __________________.

9. In their room, the story-teller helped Finny with_______.

10. Finny said that his belief must not be shaken in________.

APPENDIX D

MEASURING INSTRUMENTS

Appendix D contains the measuring instruments that were used in this study:

Permission to include the Robinson-Hall Reading Test (Canada) was granted by Dr. Francis P. Robinson, Professor of Psychology, the Ohio State University.

Permission to include the Van Wagenen Rate of Comprehension Scales was granted by Dr. M. J. Van Wagenen, Director, Van Wagenen Psycho-Educational Research Laboratories, Minneapolis.

Flexibility of Reading Test, contained in Developing Efficient Reading, by Leonard S. Braam and William D. Sheldon, copyright 1959 by Oxford University Press, Inc., reprinted by permission.

A Test of Reading Ability for

HISTORY

form: CANADA

by

Francis P. Robinson and Prudence Hall
THE OHIO STATE UNIVERSITY

"The Stirring Story of Canada's Past"*

This pamphlet contains the text to be read. Directions and the material to be filled in by the reader are given on the accompanying folder. You are not to open this pamphlet until the signal to begin reading is given. Do not mark this pamphlet in any way.

---

* Used with permission from Volume C, p. 58-64, Compton's Pictured Encyclopedia, Chicago: F. E. Compton and Co., 1939.

Form 4340

The Stirring Story of Canada's Past

The story of Canada's past has, in some respects, an interest and importance not always realized. From the standpoint of geographical exploration, not only is it full of picturesque and romantic detail, but it is the story of the opening up of a considerable fraction of the land surface of the earth; and from the standpoint of politics it is the story of a development without parallel in previous history. In that "galaxy of free nations" which has been well named the British Commonwealth of Nations, it was Canada that first achieved the status of a self-governing Dominion, that first reconciled colonial liberty with the imperial tie. The American Revolution, by means of which the 13 original British colonies in America gained their independence, broke up the Old British Empire; the Canadian Revolution—if one may apply that term to the long, gradual, and peaceful process by which Canada has won self-government—has not only *not* broken up the New British Empire, but has probably strengthened in a peculiar degree the vigorous racial bonds which bind it together.

The first Europeans to visit the shores of Canada were, so far as we know, the Northmen. These daring seafarers found their way to the northeast coast of North America, by way of Greenland, about the year 1000. Their visits, however, left no trace behind; and for practical purposes the discoverer of Canada was John Cabot, an Italian merchant—sailor in the service of the king, Henry VII of England, who sailed from Bristol and touched at what is now Canadian soil in 1497—a year before Columbus reached the South American mainland on his third voyage. Cabot, like Columbus, was in search of a sea-route to Asia; and when he did not find on the bleak coasts of North America the oriental silks and spices which he sought, he was bitterly disappointed. But though he did not find silks and spices, he found something no less profitable—the fish off the banks of Newfoundland. His son Sebastian, on his return to Europe, went so far as to report that the codfish were so numerous "they sumtymes stayed his shippes." As a result, fishermen from European ports began to come out to the Banks of Newfoundland and established a permanent link.

SEARCH FOR NORTHWEST PASSAGE

Once it became clear that America was not Asia, the aim of explorers came to be to find a way through to that "Western Sea" which we call the Pacific Ocean. In this search they followed, so far as Canada was concerned, two routes. The French strove to push through by way of the St. Lawrence valley and the Great Lakes; the English endeavored first to discover a "Northwest passage" by way of Hudson Straits and the Arctic Ocean. Both efforts were eventually crowned with success. In 1534 a French mariner named Jacques Cartier penetrated up the St. Lawrence as far as Montreal. Two or three generations later, in 1615, Samuel de Champlain, the founder of Quebec, reached Lake Huron. Thence French missionaries and fur-traders made their way into Lake Michigan and Lake Superior, and into the country beyond. Between 1658 and 1660 two French *coureurs-de-bois*, Radisson and Groseillers, penetrated as far west as the Mississippi and the Great Plains; and in 1682 La Salle followed the Mississippi to its mouth. Before French domination in Canada had come to an end, in 1763, two of the sons of an intrepid western fur trader named La Verendrye had actually sighted the foothills of the Rockies. When, therefore, Canada passed into British hands, there remained only one stage of the great process to be completed; and this was completed in 1793, when Alexander Mackenzie, a partner of the famous North-West Company, crossed the Rockies by the Peace River Pass and at last reached the Pacific.

Meanwhile, farther north, English sailors had been searching for the "Northwest passage." In 1610 Henry Hudson had penetrated into the inland ocean which still bears his name; and the servants of the Hudson's Bay Company, which was formed in 1670 to trade in the territories about Hudson Bay, made some attempts to push farther westward. It was not, however, until the modern age of Arctic exploration that any real progress was made. In 1847 Sir John Franklin, a British naval officer who had explored a good part of the Arctic coast of Canada, perished in the attempt to reach the Pacific by water; and in the search for him ships coming from the Pacific met ships from the Atlantic—thus demonstrating the existence of the Northwest passage. Not until 1906, however, was it that Roald Amundsen, a Norwegian explorer, finally achieved the feat of bringing a ship all the way through from the Atlantic to the Pacific.

SETTLEMENT AND DEVELOPMENT OF CANADA

The story of the colonization or settlement of Canada can merely be touched on here. The first colonists were French. They settled mainly in Acadia (now Nova Scotia) and along the St. Lawrence, though they established trading-posts as far west as the Illinois River and the Great Plains. By the end of the French rule in Canada their numbers had grown to more than 60,000; and during the first years of the British rule it looked as though Canada were destined to become predominantly French.

What gave Canada an English-speaking population was the American Revolution. As a result of the Revolution, about 25,000 "United Empire Loyalists" were driven from their old homes, and forced to take refuge in the wilds of Nova Scotia, New Brunswick, and Upper Canada. This immigration was supplemented later by successive waves of immigration both from the British Isles and the United States; and, despite the fact that the original French population multiplied with exceeding rapidity, it was eventually outnumbered by the English-speaking elements. Not only the Maritime Provinces and Ontario (Upper Canada), but the Western Provinces have been settled mainly by people of

English-speaking stock. A colony of Scotch Highlanders was founded in what is now Manitoba as early as 1812; and Vancouver Island, on the Pacific coast, was erected into a crown colony before the middle of the 19th century. The settlement of the greater part of the Canadian West, however, has been a much more recent matter. It has been only within the last half-century, since the building of the first transcontinental railway and the adoption of a vigorous immigration policy by the Canadian government, that the vacant spaces of the West have begun to fill up.

The political history of the Canadian people, in which French, English, and other elements have thus been mingled, has been full of interest. Though the French and the English in Canada have had occasional sharp disagreements, there are few countries in which peoples so different in language, religion, and traditions have, on the whole, gotten along so well together. And it is a remarkable fact that there is in existence in Canada today a strong national feeling—a feeling not English-Canadian, or French-Canadian, but all-Canadian.

There are few countries, moreover, whose annals present a more remarkable illustration of the growth of self-government. Not only during the period of French rule, but even under the first 30 years of British rule, Canada was governed in an arbitrary and despotic manner by officials sent out from the mother country. The inhabitants had no voice in the control of their own affairs. When, however, at the close of the American Revolution the United Empire Loyalists—people who had been accustomed in the American colonies to a fairly advanced type of democratic government—flocked into Canada, a change became necessary; and in 1791 the Canadians, both English and French, were given popular assemblies composed of elected representatives. These assemblies, unfortunately, were granted such small powers that they became centers of a violent reform agitation; and in 1837 the reformers, both in Upper and Lower broke out in armed rebellion.

The upshot of this rebellion was that British statesmen came to see that, so far at any rate as the domestic affairs of Canada were concerned, Canadians had to be allowed to govern themselves. Shortly afterwards, therefore, Canada was granted what is known as "responsible government." In 1859 a tariff barrier was raised against British goods; in 1862 Great Britain began withdrawing troops and Canada took up the burden of its own defense. In 1908 it asserted the right to exclude immigrants from the British Isles. The World War hastened Canada's rise to independent nationhood. The Canadian prime minister sat with the imperial war cabinet in London, and the government firmly denied Britain's right to requisition Canadian ships. The new status of Canada and the other dominions as autonomous nations of an imperial commonwealth was formally recognized by the mother country. Canada was represented at the peace conference after the World War, and became a member of the League of Nations. It has its own ministers at Washington, Paris, and Tokyo, and has the right to make treaties with foreign governments.

MOVEMENT TOWARD CONFEDERATION

This development has been partly the result of another movement in Canadian history—the movement toward confederation or national unity. Up to 1867 the British provinces in North America were separated and disunited; but in that year Nova Scotia, New Brunswick, Canada East (Quebec), and Canada West (Ontario) agreed to unite in a confederation to be known as the Dominion of Canada. An act establishing the Dominion was passed by the British Parliament. Since 1867 the growth of the Dominion has been phenomenal. In 1869 it acquired by purchase the vast territories of the Hudson's Bay Company; and out of these there was carved in 1870 the province of Manitoba, and in 1905 the province of Saskatchewan and Alberta. In 1871 British Columbia, on the Pacific Coast, came into the Dominion; and in 1873 Prince Edward Island, which had refused to come in in 1867, repented of its decision, and followed British Columbia's example. Thus, within a few short years, Canada grew into a serried row of self-governing provinces stretching from the Atlantic to the Pacific. Newfoundland, including Labrador, alone remains outside the Dominion.

POLITICAL HISTORY SINCE 1867

Alongside these outstanding features of Canadian history, the details of the political history of the Dominion since 1867 are of only secondary importance, but they deserve perhaps a brief description. The first administration of the Dominion was that of Sir John Macdonald, a Conservative statesman who was one of the most outstanding of the Fathers of Confederation. In 1873, Macdonald was driven from power as a result of the "Pacific Scandal"—a scandal in connection with the building of the Canadian Pacific Railway. He was succeeded by Alexander Mackenzie, the leader of the Liberal party, who held office until 1878. In that year Macdonald was returned to power on a high protectionist platform known as "the National Policy," and he remained in power, the most loved and most hated of Canadian politicians, until his death in 1891. For five years the conservative government he had headed then struggled on without him, under a succession of prime ministers; but in 1896 it was driven from power by the Liberals under Wilfrid (afterwards Sir Wilfrid) Laurier, a French-Canadian Roman Catholic. Laurier remained in office until 1911, when he was defeated on the issue of reciprocity in trade with the United States. A Conservative administration was then formed by Mr. (now Sir) Robert Borden; and it was this administration, and a "Unionist" coalition which succeeded it in 1917, that piloted Canada through the World War. Sir Robert Borden resigned in 1920, and his successor, Arthur Meighen, was defeated the next year by the Liberals under William Mackenzie King with a policy of low tariff and unified control of the government railways. Mr. King remained in power until 1930, with one brief break in 1926, when Mr. Meighen again became premier. In 1926 also, Vincent Massey was named as Canada's first minister to the United States. In 1930 discontent over the economic situation brought the Convervatives into power, with Richard B. Bennett premier. In 1935 the Liberals under King won a sweeping victory, largely over the issues of unemployment relief, lower taxes, and reciprocity with the United States.

How Canada is Governed

To explain the system under which Canada is governed is not easy. Superficially, the government of Canada resembles that of the United States, on which it was to some extent modeled. In each case, two distinct sets of political machinery were set up, one central or federal, the other local or provincial, with a division of powers between them. Just as among the 13 original States of the American Union, so among the provinces of British North America local jealousies and interests prevented a complete union and compelled an arrangement under which each state or province would have control of its own local affairs. In each case, moreover, the federal senate or upper house was made the guardian of the rights of the smaller states or provinces, which were given in it especially generous representation. But here the resemblance between the two systems ends. In its essential features, the government of Canada is modeled on that of Great Britain—a system so different from that of the United States that the people of each country find it difficult to understand the political institutions of the other. This difference arises mainly from the fact that in Great Britain and Canada the executive government (that part of the government which carries out the laws) is directly responsible to the legislature (that part of the government which makes the laws); whereas in the United States it is not.

The political machinery of the Dominion is composed of: (1) a governor-general, who represents the Crown and is appointed by the king of Great Britain; (2) a cabinet of ministers, headed by a prime minister, which corresponds almost exactly with the British cabinet; and (3) a legislature or parliament composed of two houses—an upper house termed the Senate, which is, like the British House of Lords, not elected, but appointed, and a lower house termed the House of Commons, which is modeled after the House of Commons at Westminster.

The governor-general, as the representative of the Crown, is the nominal head of the government. Yet—and this is the deceptive feature of the Canadian system—he has virtually no powers of his own. In his official capacity he can do nothing except on the advice of his Canadian ministers. He has no veto on legislation, like the President of the United States; even the speech he makes at the opening of parliament is written by the prime minister. Formerly he served as a sort of ambassador from the British government; but since 1927 this function has been exercised by a high commissioner.

It is the prime minister who is the real head of the government. He not only chooses the cabinet of ministers, or heads of departments, and thus controls the carrying out of the laws;

he also very largely directs the making of the laws. This is because he is, and must be, himself a member of parliament, who is in command of the confidence of the majority of the House of Commons, the branch of the legislature that enjoys the all-important function of voting money. He and his cabinet sit in parliament and there render daily an account of their stewardship. The President of the United States and his cabinet do not sit in Congress, and during their term of office cannot be removed by Congress, except by impeachment; but the Canadian prime minister and his cabinet can be forced to resign at any time merely by the passing in the House of Commons of a vote of want of confidence. On the other hand, so long as the Canadian cabinet continue to enjoy the confidence of the House, they are practically masters of the situation; and the prime minister, as head of the cabinet, is little less than a dictator.

Of the two houses of parliament, the House of Commons is by far the more important and powerful. In it sit nearly all the cabinet ministers, and in it alone may bills be introduced which require the expenditure of public money. On its good will and support the very existence of the administration depends. The Senate, on the other hand, unlike the Senate of the United States, occupies in the constitution a distinctly inferior position. It was intended mainly as a revising chamber, in which hasty legislation passed by the lower house might be rejected or amended; but its action in this respect has been somewhat spasmodic. Owing to the fact that its members are appointed, virtually for life, by the government of the day, and that each government has been in the habit of appointing only its own partisans, the Senate as a rule has been very subservient toward the House of Commons when the party in power commands a majority in both houses, and very obstructive when, as usually happens after the advent to power of a new government, the dominant party in the House of Commons is in a minority in the Senate. So unsatisfactory, indeed, has the Senate proved that some observers have questioned whether it performs any useful function in the Canadian system; and there have been many proposals for its abolition or reform.

POWER OF THE DOMINION

Within the sphere assigned to it, the Dominion parliament is supreme. Until 1931, the British government had, under the British North America Act, which is the fundamental document of the Canadian constitution, the power of disallowing Dominion legislation; but this power had not been exercised for many years, and in 1931 it was legally surrendered. The British North America Act, it is true, can be amended only by the British parliament; but this is now done, almost as a matter of course, on address from both houses of the Canadian parliament. For all practical purposes, the only matters with which the Dominion parliament is not competent to deal are those reserved exclusively for the provincial legislatures. Powers not specifically conferred on the provinces are reserved to the Dominion government.

PROVINCIAL GOVERNMENTS

The provincial constitutions are, some of them, survivals of the days before confederation. In each province there is a lieutenant-governor, who represents the Crown in the province as the governor general does in the Dominion; though these officials are appointed, not (as the governor-general is) by the King directly, but by the Dominion government. In each case the lieutenant-governor acts only on the advice of a provincial cabinent, headed by a prime minister or "premier," and the cabinet is responsible to the representatives of the people. Quebec, alone of all the provinces, has a legislature composed of two houses—a Legislative Assembly elected by the people, and also a Legislative Council of 24 members appointed by the lieutenant-governor for life. In all the other eight provinces there is now only a legislative assembly, those provinces which formerly had an upper chamber having discarded it. Within the spheres assigned to them, these legislatures are supreme. They have even complete oversight of the system of municipal government, which is everywhere based on the principle of popular election; and they determine the form of the provincial courts. Like the United States, Canada has a Supreme Court for the whole country. The final court of appeal for Canada in the more important cases is not, however, this court, but the Judicial Committee of the Privy Council in England—a curious survival of Canada's former colonial status. There are not a few Canadians who wish to see appeals to this Judicial Committee abolished or restricted; though there are many others in favor of the continuance of the present arrangement, which has the advantage of giving Canada a distinguished and impartial court of last resort far removed from the stress and storm of Canadian politics. In general, it must be said that if this and other slight limitations on Canadian independence continue to exist, it is because the Canadian people have willed that they should exist.

Education in Canada comes under provincial jurisdiction, and its character differs therefore in different provinces. On the whole, however, it is of a high standard. There are few countries of Canada's size which boast of so many universities; and in most of the provinces school attendance is compulsory. The existence side by side in Canada of French-speaking Roman Catholics and English-speaking Protestants has introduced complications into the educational system; and at the time of the confederation both Ontario and Quebec had to accept "separate schools"—schools, that is to say, that are Roman Catholic in Protestant Ontario and Protestant in Roman Catholic Quebec. In Ontario, moreover, difficulties have arisen from the fact that the "separate school" supporters are both French and English in point of language, whereas the official language of the province is English. But these difficulties are not impossible of solution, nor do they seriously affect the efficiency of the educational system.

(4) Van Wagenen RATE OF COMPREHENSION SCALE Form D

4

Also Part I Van Wagenen Verbal Mental Abilities Scales Form A Division 4
and Part I Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities
Senior Division

In Grades 4, 5, 6, 7, 8 and 9, give five minutes for working on the scale and use this conversion table.

No. of paragraphs correctly read	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Words per minute in grades 4-9	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
No. of paragraphs correctly read	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Words per minute in grades 4-9	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240
No. of paragraphs correctly read	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
Words per minute in grades 4-9	246	252	258	264	270	276	282	288	294	300	306	312	318	324	330	336				

In Grades 10, 11 and 12, give four minutes for working on the scale and use this conversion table.

No. of paragraphs correctly read	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Words per minute in grades 10-12	7	15	22	30	37	45	52	60	67	75	82	90	97	105	112	120	127	135	142	150
No. of paragraphs correctly read	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Words per minute in grades 10-12	157	165	172	180	187	195	202	210	217	225	232	240	247	255	262	270	277	285	292	300
No. of paragraphs correctly read	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
Words per minute in grades 10-12	307	315	322	330	337	345	352	360	367	375	382	390	397	405	412	420				

DIRECTIONS FOR RATE OF COMPREHENSION TEST

Read paragraph A carefully.

A Jane needed a spool of silk thread to finish her new dress. But when she went to the store for her mother she forgot to get the ~~buttons~~ she needed.

In the last half of this paragraph the word buttons does not fit in with the meaning of the rest of the paragraph, so buttons is crossed out.

B The carpenter asked Tom to go to the hardware store and get him a pound of nails. When Tom got back with the matches the carpenter gave him a nickle.

C We are planning to go on an all day picnic tomorrow. We want to get started just as early in the afternoon as we can get away.

D John's car came to a stop because there was no more gasoline in the tank. When he had to walk over a mile to get water it made him cross.

E When we hit the man as he was crossing the street it made him very angry. While he was getting up and brushing off his clothes he laughed at us.

F There was a very large crowd to see the motion picture last night. We got there very early but even then there was hardly an empty table in the place.

G The ball game was more than half over when we got to it but it was so exciting that we were glad to see even the first part of it.

LAST NAME (PLEASE PRINT)

FIRST NAME

GRADE

SCHOOL

TEACHER

DATE

Copyright, 1953, M. J. Van Wagenen
Minneapolis, Minnesota

RATE OF COMPREHENSION

1. Alice had wanted a new sewing machine for a long time. She was very happy when she got one as a Christmas present and has already learned to play it.

2. The fire in the city last night was such a big one and could be seen from so far away that people drove long distances to see the fireworks.

3. Henry feels sure that he will be a good carpenter when he grows up. Whenever his mother has anything to be repaired around the house he does it very poorly.

4. The blizzard lasted so long that the Scott family was without food for two days. As soon as the storm let up Mr. Scott hurried to the store for some fuel.

5. My friend lives a mile from the main road. Whenever I visit her I go as far as I can on the bus and swim the rest of way.

6. Mary expects to get a letter telling her of her brother's death at any time so she watches with a great deal of happiness for the coming of the mailman.

7. Thomas' new bicycle breaks down nearly every time he rides it. The boys think it must have been a very costly one, however much he may have paid for it.

8. Margaret liked to sit on the beach in her bathing suit but the sun shone so brightly that she was afraid of getting wet if she stayed out too long.

9. Every one in Marshall calls the old shoemaker on the corner Uncle John. Many people have been going to him to have their watches repaired for the last twenty years.

10. It is cloudy this morning and looks as if it would rain in a short time. If you go to the store be sure to take your cane with you.

11. During the winter squirrels can seldom get food from the earth because it is covered with deep snow, so during the fall they store up fuel for the coming winter.

12. Since they have been living at the lake the boys have become so fond of rowing that we have bought each one of them a new bicycle for his birthday.

13. Alice is making a new dress to wear to a party next week. She expected to have it done tonight but she did not have enough paint to finish it.

14. All the boys in our school like Peter and want him to play in all their games. This is because he plays unfairly when he is on the losing side.

15. There was danger of fire in the woods since no rain had fallen for weeks. So when campers came they were told it was too wet to start a fire.

16. Otto always shares his toys and candies with his playmates whether he likes them or not. Because of this trait everyone who knows him thinks he is very selfish.

17. The firemen came rushing down the street to the corner house but when they got there they were too late to help as the cat had already been put out.

18. Eggs were so high last winter that Mrs. Scott decided not to use them any longer in baking. In making cakes she selected recipes which did not call for butter.

19. Mr. Brown is an honest man and has been such a good mayor of our city that nearly everybody will vote against him if he runs for the office again.

20. Some children who live in the country think a library is a place where books are made but city children know that it is a place where they are sold.

21. There has been a great deal of rain this summer. In fact, we have had so much that it has been too dry for anyone's garden to grow well.

22. Henry and John started to build a kennel in which their new dog could sleep nights. When it was nearly finished they suddenly discovered that they were out of mucilage.

23. Mr. Jones expects to move into his new house soon. Only a little carpenter work remains to be done and the plumber thinks he can have that finished next week.

24. John had never seen a mountain before he went to visit his country cousins. He was very much thrilled at his first view of one because it seemed so active.

25. When it is cold the ice freezes thick enough for children to skate safely but it was so warm last winter that children could not go swimming at any time.

26. The old roof on our house has been leaking very badly for a long time. Father says that we shall just have to have a new chimney before winter comes.

27. We started out for the concert very early last night but when we got there we found the restaurant already so crowded that we could not get a seat anywhere.

28. The children were a very gay and happy lot when they got back from the picnic. To be in such a mood they must have had a dismal time indeed.

(Continue on next page)

29. The man who does our painting always forgets to paint something so he has to come back again. The last time he was here he forgot to do the rugs.

30. Mr. Williams has been going to his work on the bus. He bought a new car one day last week so now he can walk to his work every morning.

31. When Ralph's mother lets him play every afternoon during the summer while she washes clothes for other people to earn a living, we think she is very cruel to him.

32. The new hunting dog which we bought only a short time ago was delivered in a crate. When we opened it he jumped out and began to purr very happily.

33. You had better look in your mail box for some mail for you. When Jane and I were coming down the street we saw the milkman stop at your house.

34. Joseph is so fond of animals that he has no trouble in taming the wild ones that he catches young. When he grows up he expects to be a butcher.

35. Many children have been having the measles lately. Although it was clear and warm yesterday very few children were at the school picnic. The rain must have kept them away.

36. Last month the carpenters put a new roof on our house and this week the painters have been here. Our house begins to look much like an old one again.

37. Martin ran hurriedly out of the house with his ball and bat. His sister, who saw him go, called to her mother that Martin had gone to play marbles again.

38. The doctor has been stopping at the next door every day for a week. As we have not seen the little boy for a while he must be away again.

39. All the boys except Ralph were wearing their bathing suits, so when a swim was decided upon Ralph ran home as fast as he could to get his baseball suit.

40. It always makes Frank very angry to see a big boy tease and abuse a smaller one. He started in to laugh when Henry tripped up his little brother yesterday.

41. When Harry fell off his new pony and broke his arm his mother was very much frightened and rushed him to the dentist just as fast as she could drive.

42. Jane is a clerk at the ribbon counter in a large department store in our city. It amuses her very much when some people try to match dishes for themselves.

43. When we drove home after the shower it seemed as if half the trees along the road had been blown down. It must have taken a heavy rainfall to do that.

44. Harry started to the store on his bicycle to get some groceries. The streets were so icy and the wind blew so hard that he found the walking very difficult.

45. During his vacation Theodore had to work in a meat market instead of playing with the other boys. He used to get very tired of cutting cloth day after day.

46. The boys were afraid that the waves would overturn their boat when the wind came up so quickly so they swam back to the shore as quickly as they could.

47. Our teacher told us one morning that sponges are the skeletons of animals. Since then we have been trying to find out what kind of looking plants they come from.

48. Whenever John was late to breakfast he always laid it to his broken watch. He will have to find another excuse now as he got a new pen for Christmas.

49. John earns money by keeping hens and selling eggs in a nearby city. As he delivers them while they are perfectly fresh he gets a good price for his vegetables.

50. Jane learned so easily that she seldom took the trouble to look at her lessons. When she failed in school everyone knew that it was due to her stupidity.

51. Margaret is very much afraid of getting sunburned in the summer. This is the reason why she will never go out for a walk without taking her dog with her.

52. The teacher seems to think that Jack is either very stupid or very lazy or perhaps both. It must be because he does all of his school work so well.

53. John has already worn a hole in the bottom of one of his new shoes. Tell him to be sure to stop at the tailor's to have it repaired today.

54. When Harold started the brush fire in the dry grass back of our house this afternoon he never thought that the disease would spread so rapidly over the whole place.

55. The president had been shot in the morning. Every detective in the country was working on the case but at a late hour the thief had not yet been caught.

56. Frank must have had a breakdown on the way as he is very late in getting home from the village tonight. Otherwise he must have started much earlier than usual.

If you have finished before the time is up,
raise your hand and let the examiner know

MENTAL PROFILE

C-SCORES and INTELLIGENCE QUOTIENTS

derived from the
Van Wagenen Verbal Mental Abilities Scales

LAST NAME (PLEASE PRINT) ____________ FIRST NAME ____________ GRADE ______ SCHOOL ____________ TEACHER ____________ DATE ____________

Scale Scores

Part I — 1. Rate of Compr. Words per Min

420 • 412 • 405 • 397 • 390 • 382 • 375 • 367 • 360 • 352 • 345 • 336 • 330 • 324 • 321 • 318 • 315 • 312 • 309 • 306 • 300 • 294 • 291 • 288 • 285 • 282 • 279 • 276 • 270 • 264 • 261 • 258 • 255 • 252 • 249 • 246 • 240 • 234 • 231 • 228 • 225 • 222 • 219 • 216 • 210 • 204 • 201 • 198 • 195 • 192 • 189 • 186 • 180 • 174 • 171 • 168 • 165 • 162 • 159 • 156 • 150 • 144 • 141 • 138 • 135 • 132 • 129 • 126 • 120 • 114 • 111 • 108 • 105 • 102 • 99 • 96 • 90 • 84 • 81 • 78 • 75 • 72 • 63 • 66 • 60 • 54 •

Part II — 2. Perc. of Rel.

115 • 114 • 113 • 112 • 111 • 110 • 109 • 108 • 107 • 106 • 105 • 104 • 103 • 102 • 101 • 100 • 99 • 98 • 97 • 96 • 95 • 94 • 93 • 92 • 91 • 90 • 89 • 88 • 87 • 86 • 85 • 84 • 83 • 82 • 81 • 80 • 79 • 78 • 77 • 76 • 75 • 74 • 73 • 72 • 71 • 70 • 69 • 68 • 67 • 66 • 65 • 64 • 63 • 62 • 61 • 60 • 59 • 58 • 57 • 56 • 55 • 54 • 53 •

C-scores — 3. Vocab. in Context

141 • 140 • 139 • 138 • 137 • 136 • 135 • 134 • 133 • 132 • 131 • 130 • 129 • 128 • 127 • 126 • 125 • 124 • 123 • 122 • 121 • 120 • 119 • 118 • 117 • 116 • 115 • 114 • 113 • 112 • 111 • 110 • 109 • 108 • 107 • 106 • 105 • 104 • 103 • 102 • 101 • 100 • 99 • 98 • 97 • 96 • 95 • 94 • 93 • 92 • 91 • 90 • 89 • 88 • 87 • 86 • 85 • 84 • 83 • 82 • 81 • 80 • 79 • 78 • 77 • 76 • 75 • 74 • 73 • 72 • 71 • 70 • 69 • 68 • 67 • 66 • 65 • 64 • 63 • 62 • 61 • 60 • 59 • 58 • 57 • 56 • 55 • 54 • 53 • 52 • 51 • 50 • 49 •

4. Vocab. in Isolation

142 • 141 • 140 • 139 • 138 • 137 • 136 • 135 • 134 • 133 • 132 • 131 • 130 • 129 • 128 • 127 • 126 • 125 • 124 • 123 • 122 • 121 • 120 • 119 • 118 • 117 • 116 • 115 • 114 • 113 • 112 • 111 • 110 • 109 • 108 • 107 • 106 • 105 • 104 • 103 • 102 • 101 •(100) 100 • 99 • (95) 98 • 97 • (90) 96 • 95 • (85) 94 • 93 • (80) 92 • 91 • (75) 90 • 89 • (70) 88 • 87 • (65) 86 • 85 • (60) 84 • 83 • 82 • (55) 81 • 80 • 79 • (50) 78 • 77 • 76 • (45) 75 • 74 • 73 • (40) 72 • 71 • 70 • (35) 69 • 68 • 67 • (30) 66 • 65 • 64 • (25) 63 • 62 • 61 • (20) 60 • 59 • 58 • (15) 57 • 56 • 55 • (10) 54 • 53 • 52 • 51 • 50 • 49 • 48 •

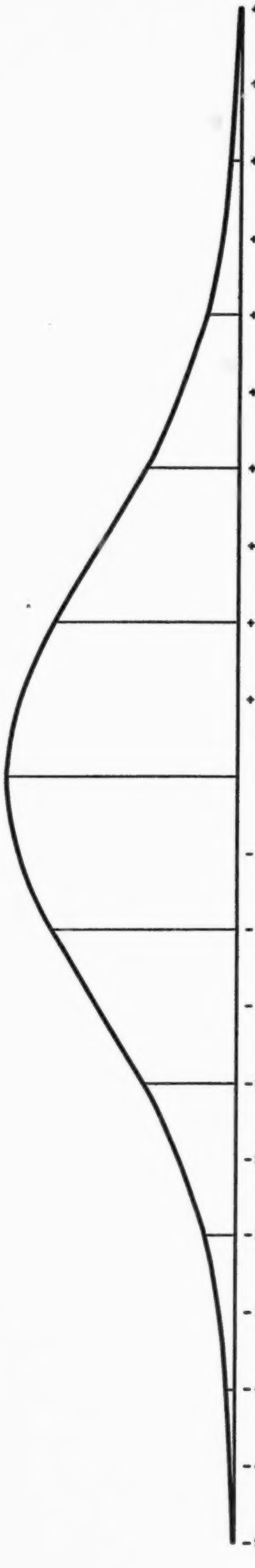
5. Range of Inf.

120 • 119 • 118 • 117 • 116 • 115 • 114 • 113 • 112 • 111 • 110 • 109 • 108 • 107 • 106 • 105 • 104 • 103 • 102 • 101 • 100 • 99 • 98 • 97 • 96 • 95 • 94 • 93 • 92 • 91 • 90 • 89 • 88 • 87 • 86 • 85 • 84 • 83 • 82 • 81 • 80 • 79 • 78 • 77 • 76 • 75 • 74 • 73 • 72 • 71 • 70 • 69 • 68 • 67 • 66 • 65 • 64 • 63 • 62 • 61 • 60 • 59 • 58 • 57 • 56 • 55 • 54 • 53 • 52 • 51 • 50 •

Grade Level	Chron. Age	Grade Level	Age Level
13.0 •	18-2 •	13.0 •	18-2 •
12.10•	18-0 •	12.10•	18-0 •
12.8 •	17-10•	12.8 •	17-10•
12.6 •	17-8 •	12.6 •	17-8 •
12.4 •	17-6 •	12.4 •	17-6 •
12.2 •	17-4 •	12.2 •	17-4 •
12.0 •	17-2 •	12.0 •	17-2 •
11.10•	17-0 •	11.10•	17-0 •
11.8 •	16-10•	11.8 •	16-10•
11.6 •	16-8 •	11.6 •	16-8 •
11.4 •	16-6 •	11.4 •	16-6 •
11.2 •	16-4 •	11.2 •	16-4 •
11.0 •	16-2 •	11.0 •	16-2 •
10.10•	16-0 •	10.10•	16-0 •
10.8 •	15-10•	10.8 •	15-10•
10.6 •	15-8 •	10.6 •	15-8 •
10.4 •	15-6 •	10.4 •	15-6 •
10.2 •	15-4 •	10.2 •	15-4 •
10.0 •	15-2 •	10.0 •	15-2 •
9.10 •	15-0 •	9.10 •	15-0 •
9.8 •	14-10•	9.8 •	14-10•
9.6 •	14-8 •	9.6 •	14-8 •
9.4 •	14-6 •	9.4 •	14-6 •
9.2 •	14-4 •	9.2 •	14-4 •
9.0 •	14-2 •	9.0 •	14-2 •
8.10•	14-0 •	8.10•	14-0 •
8.8 •	13-10•	8.8 •	13-10•
8.6 •	13-8 •	8.6 •	13-8 •
8.4 •	13-6 •	8.4 •	13-6 •
8.2 •	13-4 •	8.2 •	13-4 •
8.0 •	13-2 •	8.0 •	13-2 •
7.10•	13-0 •	7.10•	13-0 •
7.8 •	12-10•	7.8 •	12-10•
7.6 •	12-8 •	7.6 •	12-8 •
7.4 •	12-6 •	7.4 •	12-6 •
7.2 •	12-4 •	7.2 •	12-4 •
7.0 •	12-2 •	7.0 •	12-2 •
6.10•	12-0 •	6.10•	12-0 •
6.8 •	11-10•	6.8 •	11-10•
6.6 •	11-8 •	6.6 •	11-8 •
6.4 •	11-6 •	6.4 •	11-6 •
6.2 •	11-4 •	6.2 •	11-4 •
6.0 •	11-2 •	6.0 •	11-2 •
5.10•	11-0 •	5.10•	11-0 •
5.8 •	10-10•	5.8 •	10-10•
5.6 •	10-8 •	5.6 •	10-8 •
5.4 •	10-6 •	5.4 •	10-6 •
5.2 •	10-4 •	5.2 •	10-4 •
5.0 •	10-2 •	5.0 •	10-2 •
4.10•	10-0 •	4.10•	10-0 •
4.8 •	9-10•	4.8 •	9-10•
4.6 •	9-8 •	4.6 •	9-8 •
4.4 •	9-6 •	4.4 •	9-6 •
4.2 •	9-4 •	4.2 •	9-4 •
4.0 •	9-2 •	4.0 •	9-2 •
3.10•	9-0 •	3.10•	9-0 •
3.8 •	8-10•	3.8 •	8-10•
3.6 •	8-8 •	3.6 •	8-8 •
3.4 •	8-6 •	3.4 •	8-6 •
3.2 •	8-4 •	3.2 •	8-4 •
3.0 •	8-2 •	3.0 •	8-2 •

Date	Form and Div.	1. Rate of Compr.	2. Perc. of Rel.	3. Vocab. in Context	4. Vocab. in Isolation	5. Range of Inf.	Date	Form and Div.
5.____	____	____	____	____	____	____	5.____	____
4.____	____	____	____	____	____	____	4.____	____
3.____	____	____	____	____	____	____	3.____	____
2.____	____	____	____	____	____	____	2.____	____
1.____	____	____	____	____	____	____	1.____	____

Intelligence Quotients



Quartile Dev.	Per Cent Placement	I. Q. 1. Rate of Compr.	2. Perc. of Rel.	3. Vocab. in Context	4. Vocab. in Isolation	5. Range of Inf.	Average Verbal I. Q.
+5.0	100	150 •	•	•	•	•	150 •
+4.5	95	145 •	•	•	•	•	145 •
+4.0	90	140 •	•	•	•	•	140 •
+3.5	85	135 •	•	•	•	•	135 •
+3.0	80	130 •	•	•	•	•	130 •
+2.5	75	125 •	•	•	•	•	125 •
+2.0	70	120 •	•	•	•	•	120 •
+1.5	65	115 •	•	•	•	•	115 •
+1.0	60	110 •	•	•	•	•	110 •
+.5	55	105 •	•	•	•	•	105 •
.0	50	100 •	•	•	•	•	100 •
-.5	45	95 •	•	•	•	•	95 •
-1.0	40	90 •	•	•	•	•	90 •
-1.5	35	85 •	•	•	•	•	85 •
-2.0	30	80 •	•	•	•	•	80 •
-2.5	25	75 •	•	•	•	•	75 •
-3.0	20	70 •	•	•	•	•	70 •
-3.5	15	65 •	•	•	•	•	65 •
-4.0	10	60 •	•	•	•	•	60 •
-4.5	5	55 •	•	•	•	•	55 •
-5.0	0	50 •	•	•	•	•	50 •

Quartile Dev.	Per Cent Placement	I. Q. 1. Rate of Compr.	2. Perc. of Rel.	3. Vocab. in Context	4. Vocab. in Isolation	5. Range of Inf.	Average Verbal I. Q.
		5.____	____	____	____	____	____
		4.____	____	____	____	____	____
		3.____	____	____	____	____	____
		2.____	____	____	____	____	____
		1.____	____	____	____	____	____

READING FLEXIBILITY TEST

Test I

The following reading selections are designed to help you check your reading rate, comprehension and flexibility. Read and follow the directions preceding each selection.

Dr. L. S. Braam
Dr. W. D. Sheldon
Reading Center
Syracuse University

1960

FICTION I

PURPOSE: To read as quickly as you can and still understand the general content of this selection.

PROCEDURE: Record the time (hour, minutes, seconds) when you begin reading the selection. After reading the selection, again record the time. Then answer the questions related to the selection.

Beginning Time:

Hour:______Minutes:______Seconds:______

REST STOP FOR THE SANDERLINGS

The night when the great run of shad was passing through the inlet and into the river estuary was a night, too, of vast movements of birds into the sound country.

At daybreak and the half tide two small sanderlings ran beside the dark water on the ocean beach of the barrier island, keeping in the thin film at the edge of the ebbing surf. They were trim little birds in rust and gray plumage, and they ran with a twinkle of black feet over the hard-packed sand, where puffs of blown spume or sea froth rolled like thistledown. They belonged to a flock of several hundred shore birds that had arrived from the south during the night. The migrants had rested in the lee of the great dunes while darkness remained; now growing light and ebbing water were drawing them to the sea's edge.

As the two sanderlings probed the wet sand for small, thin-shelled crustaceans, they forgot the long flight of the night before in the excitement of the hunt. For the moment they forgot, too, that faraway place which they must reach before many days had passed--a place of vast tundras, of snow-fed lakes, and midnight sun. Blackfoot, leader of the migrant flock, was making his fourth journey from the southernmost tip of South America to the Arctic nesting grounds of his kind. In his short lifetime he had traveled more than sixty thousand miles, following the sun north and south across the globe, some eight thousand miles spring and fall. The little hen sanderling that ran beside him on the beach was a yearling, returning for the first time to the Arctic she had left as a fledgling nine months before. Like the older sanderlings, Silverbar had changed her winter plumage of pearly gray for a mantle heavily splashed with cinnamon and rust, the colors worn by all sanderlings on their return to their first home.

In the fringe of the surf, Blackfoot and Silverbar sought the sand bugs or Hippa crabs that honeycombed the ocean beach with their burrowings. Of all the food of the tide zone they loved best these small, egg-shaped crabs. After the retreat of each wave the wet sand bubbled with the aid released from the shallow crab burrows, and a sanderling could, if he were quick and sure of foot, insert his bill and draw out the crab before the next wave came tumbling in. Many of the crabs were washed out by the swift rushes of the waves and left kicking in liquefying sand. Often the sanderlings seized these crabs in the moment of their confusion, before they could bury themselves by furious scrambling.

Pressing close to the backwash, Silverbar saw two shining air bubbles pushing away the sand grains and she knew that a crab was beneath. Even as she watched the bubbles her bright eyes saw that a wave was taking form in the tumbling confusion of the surf. She gauged the speed of the mound of water as it ran, toppling, up the beach.. Above the deeper undertones of moving water she heard the lighter hiss that came as the crest began to spill. Almost in the same instant the feathered antennae of the crab appeared above the sand. Running under the

FICTION I (continued)

very crest of the green water hill, Silverbar probed vigorously in the wet sand with opened bill and drew out the crab.

A tern came flying along the surf line, his black-capped head bent and his eyes alert for the movement of fish in the water. He watched the sanderlings closely, for sometimes a small beach bird could be frightened into giving up its catch. When the tern saw Blackfoot run swiftly into the path of a wave and seize a crab he slanted down menacingly, screaming threats in a shrill, grating voice.

Tee-er-r-r! Tee-er-r-r!-rattled the tern.

The swoop of the white-winged bird, which was twice as large as the sanderling, took Blackfoot by surprise, for his senses had been occupied with eluding the onrush of water and preventing the escape of the large crab held in his bill. He sprang into the air with a sharp Keet! Keet! and circled out over the surf. The tern whirled after him in pursuit, crying loudly.

In his ability to bank and pivot in the air Blackfoot was fully the equal of the tern. The two birds, darting and twisting and turning, coming up sharply together and falling away again into the wave troughs, passed out beyond the breakers and the sound of their voices was lost to the sanderling flock on the beach.

As he rose steeply into the air in pursuit of Blackfoot, the tern caught sight of a glint of silver in the water below. He bent his head to mark the new prey more certainly and saw the green water spangled with silver streaks as the sun struck the flanks of a school of feeding silversides. Instantly the tern tipped his body steeply into a plane perpendicular to the water. He fell like a stone, although his body could not have weighed more than a few ounces, struck the water with a splash and a shower of spray, and in a matter of seconds emerged with a fish curling in his bill. By this time Blackfoot, forgotten by the tern in the excitement engendered by the bright flashes in the water, had reached the shore and dropped down among the feeding sanderlings, where he was running and probing busily as before.

(900 words)

Ending time:

Hour:_______Minutes:_______Seconds:_______

____

Reference: Carson, Rachel L., Under the Sea-Wind, Oxford University Press. pp. 25-29

Reading Time Summary

	Hr.	Min.	Sec.
Ending Time			
Beginning Time			
Total Time			

/mc
7/16/64

FICTION I

1. The plumage of the sanderlings was:

a. Gray and white
b. Brown speckled
c. Rust and gray
d. Sand colored

2. The sanderlings were flying:

a/ At a slow rate of speed to accommodate the young
b. To the north
c. To the south
d. In close formation

3. The tern was:

a. Anxious to eat the sanderling
b. Able to maneuver better than the sanderling
c. Smaller than the sanderling
d. Larger than the sanderling

4. The tern was distracted from pursuing Blackfoot by:

a. A storm rolling in from the sea
b. The sight of new prey
c. A flock of sea gulls
d. The sight of a new winged enemy

5. The tern weighed

a. One ounce
b. A few ounces
c. Sixteen ounces
d. Many ounces

6. Who arrived at the estuary the same night as the sanderlings?

a. A flock of tern
b. A large fishing fleet
c. A new school of crustaceans
d. A run of shad

7. The sanderlings were able to:

a. Fly only short distances
b. Fly eight thousand miles in a season
c. Fly as much as three thousand miles in a season
d. Fly very close to the water

8. The sanderlings were born:

a. In the Arctic
b. In the Antarctic
c. Inland
d. Off the coast of Africa

9. The sanderlings hunted:

a. Crabs in the wet sand
b. Terns in the shallow water
c. Fish as the waves broke on the beach
d. Insects

10. The tern swooped and caught:

a. The sanderling
b. A silverside
c. A crab
d. Blackfoot

LITERATURE I

PURPOSE: To read as quickly as you can and still understand the general content of this selection.

PROCEDURE: Record the time (hour, minutes, seconds) when you begin reading the selection. After reading the selection, again record the time. Then answer the questions related to the selection.

Beginning Time:

Hour:______Minutes:______Seconds:______

CORTES MAKES AN ALLY

The following morning, Cortes, accompanied by fifty of his men, paid a visit to the lord of Campoalla in his own residence. It was a building of stone and lime, standing on a steep terrace of earth, and was reached by a flight of stone steps. It may have borne resemblance in its structure to some of the ancient buildings found in Central America. Cortes, leaving his soldiers in the courtyard, entered the mansion with one of his officers, and his fair interpreter, Dona Marina. A long conference ensued, from which the Spanish general gathered much light respecting the state of the country. He first announced to the chief, that he was the subject of a great monarch who dwelt beyond the waters; that he had come to the Aztec shores, to abolish the inhuman worship which prevailed there, and to introduce the knowledge of the true God. The cacique replied, that their gods, who sent them the sunshine and the rain, were good enough for them, that he was the tributary of a powerful monarch also, whose capital stood on a lake far off among the mountains; a stern prince, merciless in his exactions, and in case of resistance, or any offence, sure to wreak his vengeance by carrying off their young men and maidens to be sacrificed to his deities. Cortes assured him that he would never consent to such enormities; he had been sent by his sovereign to redress abuses and to punish the oppressor; and, if the Totonacs would be true to him, he would enable them to throw off the detested yoke of the Aztecs.

The Cacique added, that the Totonac territory contained about thirty towns and villages; which could muster a hundred thousand warriors, a number much exaggerated. There were other provinces of the empire, he said, where the Aztec rule was equally odious; and between him and the capital lay the warlike republic of Tlascala, which had always maintained its independence of Mexico. The fame of the Spaniards had gone before them, and he was well acquainted with their terrible victory at Tabasco. But still he looked with doubt and alarm to a rapture with 'the great Montezuma', as he always styled him; whose armies, on the least provocation, would pour down from the mountain regions of the west, and, rushing over the plains like a whirlwind, sweep off the wretched people to slavery and sacrifice!

Cortes endeavoured to reassure him, by declaring that a single Spaniard was stronger than a host of Aztecs. At the same time, it was desirable to know what nations would co-operate with him, not so much on his account, as theirs, that he might distinguish friend from foe, and know whom he was to spare in this war of extermination. Having raised the confidence of the admiring chief by this comfortable and politic vaunt, he took an effectionate leave, with the assurance that he would shortly return and concert measures for their future operations, when he had visited his ships in the adjoining port, and secured a permanent settlement there.

The intelligence gained by Cortes gave great satisfaction to his mind. It confirmed his former views, and showed, indeed, the interior of the monarchy to be in a state far more distracted than he had supposed. If he had before scarcely shrunk from attacking the Aztec empire in the true spirit of a knight-errant, with his single arm, as it were, what had he now to fear, when one half of the nation could be thus marshalled against the other? In the excitement of the moment, his sanguine spirit kindled with an enthusiasm which overleaped every obstacle. He communicated his own feelings to the officers about him, and, before a blow was struck, they already felt as if the banners of Spain were waving in triumph from the towers of Montezuma! But many a bloody field was to be fought, many a peril and privation to be encountered, before that consummation could be attained.

Taking leave of the hospitable Indian on the following day, the Spaniards took the road to Chiahuitzla, about four leagues distant, near which was the port discovered by Montejo, where their ships were now riding at anchor. They passed through a country of the same rich, voluptuous character as that which they had lately traversed; and arrived early next morning at the Indian town, perched like a fortress on a bold, rocky eminence that commanded the Gulf.

(742 words)

Ending Time:

Hour:______Minutes:______Seconds:______

Reference: The Oxford Anthology of American Literature, Chosen and Edited by William Rose Benet and Norman Holmes Pearson, Vol. I, pp. 677-678.

Reading Time Summary

	Hr.	Min.	Sec.
Ending Time			
Beginning Time			
Total Time			

/mc
July 1964

LITERATURE I

1. When Cortés visited the Lord of Cempoalla:

a. 500 men accompanied him
b. He went alone
c. 50 men accompanied him
d. A few native Mexicans went with him

2. The residence of the Lord of Cempoalla: was constructed of:

a. Stone
b. Brick and earth
c. Stone and lime
d. Brick and lime

3. Cortés' interpreter was:

a. A stern-faced Aztec
b. One of his own soldiers
c. A beautiful young woman
d. A Spanish general

4. The Totonac's claim of 100,000 warriors was:

a. True
b. Exaggerated
c. Proved to be right when the battle was fought
d. Disputed by Cortés

5. The Totonacs were:

a. Subjects of the Aztec
b. Free and independent
c. A peaceful tribe which would not carry weapons
d. Subjects of the Spanish

6. The victor at the battle of Tobasco was:

a. The Aztec
b. The Totonac
c. The Texans
d. The Spanish

7. The Aztec rule was:

a. Oppressive
b. Undemanding
c. Enjoyed by the Totonacs
d. Generous and protective

8. Cortés told the Lord of Cempoalla that he had come to:

a. Help the starving Totonacs
b. Introduce new methods of agriculture
c. Introduce the knowledge of the true God
d. Take slaves back to Spain

9. After his interview with the Lord of Cempoalla, Cortes was:

a. Bitterly disappointed to find him unwilling to help
b. Very tired and retired to his ship
c. Afraid his army would be beaten in battle
d. Enthusiastic about the conditions in the interior of the Aztec empire

10. Cortés forces were:

a. Able to fly the banners of Spain from the towers of Montezuma without any bloodshed
b. Forced to fight many bloody battles before victory
c. Routed the first day of battle
d. Homesick and ill

HISTORY I

PURPOSE: To read as quickly as you can and still understand the general content of this selection.

PROCEDURE: Record the time (hour, minutes, seconds) when you begin reading the selection. After reading the selection, again record the time. Then answer the questions related to the selection.

Beginning Time:

Hour:______Minutes:______Seconds:______

WASHINGTON, FARMER PRESIDENT

Washington accepted the Presidency with great reluctance. It had been his hope and wish to spend the remainder of his days at Mount Vernon as a scientific farmer, improving American husbandry by experiment and example. Washington studied the best works on the subject, corresponded with English experts such as Arthur Young, imported improved implements, and applied new methods. Tobacco culture, which had exhausted the soil of Tidewater, Virginia, was relinquished at Mount Vernon as early as 1765. Wheat, flax, and root crops were substituted for corn, pasturage was increased, a five-year rotation of crops adopted, and sheep folded on turnips or clover.

Mount Vernon, unlike the modern 'gentleman's country estate' that is supported by income from other sources, supported its proprieter; and Washington's relation to it was more like that of an industrial manager to his plant. Washington inherited an estate of 2500 acres and added about 5500 more, until Mount Vernon stretched ten miles along the broad Potomac. The 3500 acres under cultivation around 1790 were divided by tracts of woodland into separate farms, each with its own force of slaves and an overseer, who must report weekly how he had employed every hand. There were great wooden barns, with cow stables and spacious threshing-floors. The pastures, enclosed by worm fences, produced a thin, poor turf in that land of hot, dry summers. Brood-mares and blooded stallions occupied the best watered of them. Royal Gift, a fifteen-hand jackass presented by the King of Spain, had a special paddock and groom, as befitted the ancestor of the American army mule. The cattle were undersized and of low breed; the hogs ran at large through the woodlands, affording illicit sport for a pack of French boar-hounds, an unwelcome gift of Lafayette.

Mount Vernon was an industrial as well as an agricultural unit. There were slave blacksmiths, carpenters, and even bricklayers; a cider press and a still-house, where excellent rye and Bourbon whisky were made, and sold in barrels made by plantation Negroes from home-grown oak. Herring and shad fisheries in the Potomac provided food for the slaves; a gristmill turned Washington's improved strain of wheat into the finest grade of flour, which was taken to market in his own schooner. There was a weaving-shed, where a dozen different textiles were produced from local wool and flax, and West India cotton. Picture Washington rising at sunrise, breakfasting at seven, and superintending from the saddle the work on his several farms, frequently dismounting and stripping his coat to demonstrate with his strong back and large, capable hands how things should be done. His good lady, in the meantime, would be directing the work of a large force of household slaves, and helping to cut and piece home-woven cloth for the Negroes. Dinner at three ended the day's work in the field; but there was usually accounts and problems enough to occupy the master until supper.

For recreation there was fox-hunting with his own and his neighbor's packs; taking toll of the great flights of wild duck, goose, and pigeon; dancing assemblies at Alexandria. A constant stream of relations and friends flowed through the mansion house, few distinguished travelers came South unprovided with a letter to the great man, and no gentleman could be turned away from his door. The guests, in fact, ate up most of the increase not consumed by the slaves, whose children Washington was too humane to sell away from their parents.

HISTORY I (continued)

This was the life that Washington loved, and in which he hoped to spend his declining years. No detail was too small for his attention, no slave too humble to attract his interest, no blight too devastating to command his patience. Even on his campaigns, and in the Presidency, he would write sixteen-page letters of instruction to his overseers; and one suspects that, like Sir Robert Walpole, he read their reports before he turned to the affairs of state. 'The more I am acquainted with agricultural affairs, the better I am pleased with them,' he wrote to Arthur Young in 1788. 'How much more delightful... is the task of making improvements in the earth than all the vain glory which can be acquired from ravaging it by the most uninterrupted career of conquests.'

The qualities that made Washington the first farmer and the first soldier in America also made him the first statesman. As landed proprietor no less than as commander-in-chief, he had shown executive ability, the power of planning for a distant end, and a capacity for taking infinite pains. Neither drought nor defeat, nor, as it proved, political abuse, could turn him from a course that he discerned to be proper and right. In describing himself as one who inherited 'inferior endowments from nature,' Washington was too modest; but we shall under-estimate the difficulties of his task if we forget that his superiority lay in character, not in talents. He had the power of inspiring respect and trust, but not the gift of popularity; directness but not adroitness; fortitude rather than flexibility; the power to think things through, not quick perception; a natural presence and dignity, but none of that brisk assertiveness that has often given inferior men greater political influence. The mask of dignity and reserve that concealed his inner life came from shyness, humility, and stoical self-control. A warm heart was revealed in numerous kindly acts to his dependents and subordinates. And beneath the cool surface of him there glowed a fire that under provocation would burst forth in immoderate laughter, astounding oaths, or Olympian anger.

(880 words)

Ending Time:

Hour:_____ Minutes:______ Seconds:________

____

Reference: Morison, Samuel Eliot and Commager, Henry Steele, The Growth of the American Republic, Vol. I, pp 325-327.

Reading Time Summary

	Hr.	Min.	Sec.
Ending Time	____	______	______
Beginning Time	____	______	______
Total Time	____	______	______

HISTORY I

1. Washington was:

a. Eager to accept the Presidency.
b. Reluctant to accept the Presidency.
c. Physically unable to accept the post of President.
d. Eager to leave the hardships of Mount Vernon and become President.

2. As early as 1765 tobacco culture was:

a. Introduced at Mount Vernon.
b. Providing half the income at Mount Vernon.
c. Stopped at Mount Vernon.
d. Flourishing at Mount Vernon.

3. Rotation of crops was:

a. Not heard of in Washington's time.
b. Practiced at Mount Vernon.
c. Proved a failure at Mount Vernon.
d. Impossible to try because of the poor soil.

4. In addition to agriculture, Mount Vernon contained:

a. Coal mines
b. A ship yard
c. A large fish hatchery
d. Profitable industries

5. Mount Vernon was:

a. Inherited by Washington.
b. A gift from a grateful government.
c. Mortgaged to the hilt.
d. Sold to settle Washington's debts.

6. Visitors to Mount Vernon were:

a. Welcomed eagerly.
b. Discouraged from visiting the workshop.
c. Forced to help with the housework.
d. Fed skimpy meals.

7. Washington's improved strain of wheat was:

a. Taken to Alexandria to be ground into flour.
b. So fine it didn't have to be ground before it could be made into bread.
c. Ground into flour in his own grist-mill.
d. Hailed as the finest wheat ever grown.

8. Mrs. Washington enjoyed:

a. A life of leisure.
b. Preparing the meals for the slaves.
c. An active life taking part in activities at Mount Vernon.
d. The active social life of a southern belle.

9. Washington was probably more interested in his farm than in:

a. Sailing
b. Reading
c. Fighting.
d. Government.

10. Washington was considered to have been a man of character rather than:

a. One who had artistic abilities.
b. One who had great talents.
c. A good soldier.
d. A good executive.

SCIENCE I

PURPOSE: To read as quickly as you can and still understand the general content of this selection.

PROCEDURE: Record the time (hour, minutes, seconds) when you begin reading the selection. After reading the selection, again record the time. Then answer the questions related to the selection.

Beginning Time:

Hour:______Minutes:______Seconds:______

THE DEVELOPMENT OF ANAESTHESIA

The idea of producing a local anaesthesia without any general loss of consciousness was never entirely set aside by surgeons. The older attempts to obtain it by compressing the pain nerves with a tourniquet and by the application of cold to the area about to be operated upon had not been very successful but it was believed that eventually a new and more satisfactory technique would be found. Later this belief was justified by the introduction of cocaine into medical practice. Cocaine is yet another example of a remedy coming from a primitive and ancient source. We owe it to the Incas of Peru who regarded the coca-plant with great veneration and made offerings of its leaves to their Sun God. The priests also made a practice of chewing these leaves and according to an old legend, they were capable of performing almost incredible feats of endurance whilst under its influence. And quite apart from legend, the modern Peruvians recognized that chewing the leaves of the "divine plant of the Incas" warded off hunger and fatigue. It was the custom in Peru to open up old Inca graves in the hope of recovering from them ancient and precious relics, and whilst doing this the excavators were very liable to develop sore throats due to the inhaling of the fine dust into which the uncovered bodies immediately crumbled on being exposed to the air. In order to guard against these sore throats those who were engaged in the digging usually chewed coca-leaves and it was mainly through this habit of theirs that the notice of European travellers was drawn to the medicinal properties of the coca-plant.

The first man to use cocaine for medical purposes was the Viennese surgeon, Koller, who in 1884 discovered that it was of great value as a local anaesthetic in eye operations. But we owe almost all further developments in cocaine anaesthesia to the enterprise and the ingenuity of American surgeons. Solutions of cocaine were first injected into nerve endings by the American surgeon W. S. Halstead (1852), and three years later J. L. Corning introduced the technique known as spinal anaesthesia. This valuable method of employing cocaine consists of injecting it into the spinal canal so that it produces complete anaesthesia of the nerves lying below the level of the injection. The American surgeon, G. W. Crile, combined spinal anaesthesia with general anaesthesia, thereby reducing the shock of an operation. Chemists were not long in discovering the chemical structure of cocaine and for many years they have been synthesizing a number of new compounds of a similar nature to cocaine but much less toxic.

The story of anaesthesia is therefore very closely linked with medical progress in the New World. Not only were American surgeons much quicker to realize the great potentialities of nitrous oxide and ether as general anaesthetics, not only were they more enterprising in developing local anaesthesia than we were, but cocaine, the drug first used in local anaesthesia, came originally from the New World. We also owe to the Incas of Peru a preparation which is now being used on a big scale in conjunction with anaesthetics, the drug known as curare. One of the requirements of the modern surgeon is that the muscles of the patient on whom he is operating should be fully relaxed, and the muscles of modern urbanized man are very seldom in this condition even when he is asleep.

Curare possesses the special property of paralyzing the nerve endings in the muscles and when the anaesthetist finds it impossible to obtain a good muscular relaxation by his anaesthetic alone he gives the patient an injection of this drug. It was used long ago by the old hunters of Peru who dipped their arrow heads in the poison because they found that by doing so they lost fewer of their arrows through the wounded prey escaping. The poison acted by being absorbed from the wound into the animal's blood stream and by quickly bringing about a paralysis of its muscles.

The administration of an anaesthetic has now become such a skilled proceeding that anaesthetics is recognized as a specialty in medicine. It is moreover a specialty which is of immense importance to the modern surgeon, who has made such spectacular advances during the last fifty years that he has been able to enter into areas of the body into which his predecessors would not have dared to intrude, into regions such as the brain, the chest cavity, the heart, the lungs and the great blood vessels. This remarkable surgical progress could never have been made had it not been for the parallel advances being made in the specialty of anaesthesia.

(798 words)

Ending Time:

Hour:______Minutes:______Seconds:______

Reference: Walker, Kenneth, The Story of Medicine, pp. 214-216.

Reading Time Summary

	Hr.	Min.	Sec.
Ending Time	_____	_____	_____
Beginning Time	_____	_____	_____
Total Time	_____	_____	_____

/mc
July 1964

SCIENCE I

1. The development of an anesthesia has benefited:

   a. Modern hospitals
   b. Many large drug producers
   c. The Incas of Peru
   d. Modern surgery

2. Cocaine is derived from:

   a. The coca plant
   b. The coffee bean
   c. The venom of the cobra
   d. The bark of the curare tree

3. A local anaesthetic keeps a patient in:

   a. The same city in which he resides.
   b. A general state of consciousness.
   c. The hospital for a longer period of time.
   d. A cooling solution.

4. Excavators at tombs in Peru chewed coca leaves to:

   a. Ward off evil spirits.
   b. Guard against sore throats.
   c. Placate the Gods for intruding into their world.
   d. Make the air fragrant.

5. Cocaine was first used for medical purposes by:

   a. An American named Cushing
   b. An Austrian named Koller
   c. A Frenchman named Pasteur
   d. An Englishman named Lister

6. American surgeons:

   a. Lagged behind in the use of anesthetics.
   b. Were quick to use anesthetics
   c. Discovered cocaine
   d. Were discouraged from using anaesthetics by the government.

7. The technique known as spinal anaesthesia was developed in:

   a. The eighteenth century
   b. The early twentieth century
   c. The early 19th century
   d. The middle 19th century

8. We owe to the Incas of Peru a preparation called:

   a. Curare
   b. Nitrous oxide
   c. Methiolate
   d. Ether

9. One of the things a modern surgeon requires of a patient is:

   a. A large bank account
   b. Tense muscles
   c. The ability to recover quickly
   d. Relaxed muscles.

10. The advances in anaesthetics have made it possible for surgeons to:

    a. Do surgical procedures without sterilization of the instruments.
    b. Perform operations in a shorter time
    c. Perform operations in a patient's home.
    d. Enter areas of the body into which his predecessors would not have dared intrude.

PSYCHOLOGY I

PURPOSE: To read as quickly as you can and still understand the general content of this selection.

PROCEDURE: Record the time (hour, minutes, seconds) when you begin reading the selection. After reading the selection, again record the time. Then answer the questions related to the selection.

Beginning Time:

Hour:_____Minutes:________Seconds:________

INTERESTS

The primary basis upon which children select interests is that of the emotional appeal that is felt. Their likes and dislikes are personal, and an interest must produce satisfactions and be consistent with their personal aims in order to be acceptable. If unpleasant mental effort makes pursuit of an intellectual interest dissatisfying, preference is likely to be given to substituted interests in which physical activity predominates.

Many interests are associated with wish fulfillment. Individuals constantly seek experiences that afford them success. Their standards of success vary but are usually associated with desire for personal recognition or maintenance of self-esteem. The experiences through which success is sought may be obtained through active interest, in which one is personally engaged in the pursuit of an interest. Playing tennis or building boatз may be considered active interests. The experience of others may be utilized vicariously, as in inactive or passive interests, from which the emotional effect may be felt through mental participation. Reading a book or watching a teennis match constitutes a passive interest. Interests may be variously motivated. Several motives may operate simultaneously; but although individuals may be aware of their preferences for certain activities, they are seldom conscious of the purposes that such activities serve.

A child is seeking satisfaction of a broad purpose in selecting one game rather than another because of particularly happy relationships with a certain group of playmates. His interest in the game may be both in the desire to excel in the skill involved and in enjoying the satisfaction of being socially acceptable. He may even participate solely because his refusal might be socially offensive. Certain individual interests may have mildly competitive aspects, as in postage-stamp collecting, at which the child hopes to acquire those items which are more valuable and rare than those of other children. One may become interested in taking long walks because of desire to be alone with his thoughts, the pleasantness of places he may visit, or the beneficial effects of fresh air and exercise. The individual may be unaware that he is relieving himself of many tensions and is making an emotional as well as physiological adjustment.

The exploratory or imitative character of many interests constitutes a form of adaptive activity. A little girl plays school in investigation of her ability at adult imitation. A boy may construct a miniature pulpit of scrap lumber and play minister as an experiment in realism. The amateur photographer adheres to prescribed techniques in order to obtain pleasurable success in results comparable with those of professional photographers. Imitation extends beyond blind acceptance of behavior patterns of other persons into desire for satisfactions to be derived from success in duplicating their performance.

The extent to which one identifies himself with characters in movies or reading and obtains vicarious satisfaction depends largely upon the individual, whose responses may be subjective or highly objective. Some individuals are moved by scenes of suffering or sorrow to the extent of shedding tears. Others may regard the performance as oversentimental and riduculous. Without leaving his easy chair one may, through reading, enjoy many of the experiences of traveling in foreign countries or being emotionally in rapport with the characters in a work of fcition. One may harmlessly experience the thrills of danger by identifying himself with a character in a movie or a story whose performance at daring deeds he might be relactant to imitate in actual life.

People attend movies or read from very obscure motives, which are in most cases unknown to them. These interests may be sought simply to relieve boredom or to obtain the pleasure that is habitually obtained from witnessing favorite actors or reading works by certain authors and enjoying their characteristic styles.

Painters, artists, writers, and musicians make their work capable of arousing in others the emotions that they themselves experience. The fact that individuals make different interpretations of identical situations accounts for the variable effects of a movie or a book.

Movies, in particular, become an interest of many people because of the completeness of detail with which they may enjoy a different type of life from that which they experience daily. As a rule, the environment depicted is on a higher plane from that of their own everyday experiences. The tendency of movies to glorify even the most lowly activities of life possesses democratic appeal. Individuals may readily discover means of escape from their own drab surroundings and annoyances by imagining that they themselves are performing the activities that they are witnessing.

A wide variety of well-selected interests is important to a child's emotional life as a means of utilizing the flow of energy that dissatisfying situations generate. In cases in which a child is frustrated by lack of success in the classroom or is distressed by certain conditions in his home, it is highly important that his pent-up emotions find opportunity for wholesome expression. A game of baseball after school or a hike into the woods with companions affords opportunity to maintain emotional poise. The more active a child is in pursuit of a variety of constructive interests, the wider the range of possibilities for making adequate personal adjustments.

(871 words)

Ending Time

Hour:_____Minutes:_______Seconds:________

Reference: Davis, Robert A. Educational Psychology, pp. 98-103.

Reading Time Summary

	Hr.	Min.	Sec.
Ending Time			
Beginning Time			
Total Time			

PSYCHOLOGY I

1. A wide variety of well-selected interests is important to a child's emotional life as a means of:

   a. Helping him decide what profession he wishes to follow.
   b. Helping him choose friends.
   c. Utilizing the flow of energy that dissatisfying situations generate.
   d. Freeing the parents from constant supervision.

2. Children select interests primarily because of:

   a. Emotional appeal
   b. The climate in which they live
   c. Pressure from their parents
   d. Pressure from their peers

3. If an intellectual interest does not produce satisfaction:

   a. It shows a child has low intelligence
   b. Parents should consult with the school
   c. A child should be punished
   d. An interest in which physical activity predominates is likely to be given preference.

4. Individuals constantly seek experiences that afford them:

   a. Close association with others
   b. Success
   c. Monetary rewards
   d. A chance to conquer unsurmountable obstacles

5. Many interests are associated with:

   a. Remembrances of pleasant experiences
   b. Stamp collecting
   c. Self-agrandizement
   d. Wish fulfillment

6. A child who does not excel in a game:

   a. Will always discontinue participation in that game
   b. May continue to play because of a particularly happy relationship with a certain group
   c. Is a poor sport
   d. Shows lack of coordination

7. It is important to a child's emotional life to have:

   a. A wide variety of passive interests
   b. a few interests at which he excels
   c. One interest at which he excels
   d. A wide variety of well-selected interests

8. Movies provide:

   a. An undesirable means of escape because of their unrealistic portrayal of everyday experiences.
   b. A chance to enjoy the everyday life of people from an environment which is depicted to be a higher level.
   c. A cheap form of baby sitting
   d. A substantial part of the education of children in rural schools.

9. Individuals are seldom conscious:

   a. Of their own defects
   b. Of the purposes certain activities serve.
   c. Of their surroundings
   d. Of their responsibilities to society

10. Duplicating the performance of others is:

   a. Merely blind imitation
   b. Desire for satisfaction to be derived from the success of others
   c. Considered cheating
   d. Acceptable behavior only in children

APPENDIX E

INTERCORRELATIONS AMONG DEPENDENT AND INDEPENDENT VARIABLES IN THE INVESTIGATION

TABLE 13

INTERCORRELATIONS AMONG DEPENDENT AND INDEPENDENT VARIABLES IN THE INVESTIGATION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Van Wagenen Rate Gain between Forms I & II		-1613	2091	1677	0129	0087	-0224	-0197	0120	-0549	-0268	-0380
Van Wagenen Rate Gain between Forms II & III			-1601	0087	0225	-0360	-0726	0272	0612	0281	0815	1204
Robinson-Hall Rate Gain between Forms I & II				1044	1028	0704	1397	-1287	-0181	-1584	-0060	-1504
Braam-Sheldon Flexibility Gain between Forms I & II					-5053	1018	1460	-0638	1019	-0625	1153	-1863
Braam-Sheldon Flexibility Gain between Forms II & III						0048	-0830	-0365	-0172	-0869	-0406	0104
Verbal Aptitude							1781	-0771	3213	1073	2029	1979
Math Aptitude								-3310	1641	-0101	2275	0865
Sex									-0669	-0878	-1500	-0603
Comprehension Score on Form I, Robinson-Hall										2743	2670	2596
Comprehension Score on Form II, Robinson-Hall											2332	3863
Comprehension Score on Form I, Braam-Sheldon												3582
Comprehension Score on Form II, Braam-Sheldon												

Decimals have been omitted. N ranged from 140 to 231.

APPENDIX F

RELIABILITY OF THE BRAAM-SHELDON FLEXIBILITY OF READING TEST

Pearson product-moment correlation coefficients for the rate and comprehension aspects of the Braam-Sheldon Flexibility of Reading Test were obtained during the second semester of the 1965-66 school year. The following steps were taken:

1. Population sample was selected from freshmen students enrolled in the Improvement of Learning course at Syracuse University.
2. On the second meeting of the semester, Form 1 was administered.
3. On the third meeting of the semester, Form 2 was administered.
4. Six weeks later, Form 3 was administered.
5. Only data from students who had taken all three forms were used.
6. For the rate reliability, scores on the five passages comprising each of the forms were recorded in addition to a total over-all score for each form.
7. For the comprehension reliability, scores on the five passages comprising each of the forms were recorded in addition to a total average score for each form.
8. These data were processed through the Tape Storage and Retrieval (TSAR) program at the university's computing center.

TABLE 14

PRODUCT-MOMENT CORRELATION COEFFICIENTS FOR RATE ON BRAAM-SHELDON FLEXIBILITY OF READING TEST

		Form I						Form II						Form III					
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Form I	Narrative		8515	7841	7381	7035	8960	6978	6761	7720	6598	6003	7502	6846	7193	6004	6162	5588	6977
	Literature			7425	7782	7174	9008	6111	5664	7325	6803	6922	7245	6301	7121	5517	5126	4849	6318
	Science				8643	8280	9344	8771	8494	8380	7974	6776	8914	7398	8261	7147	7225	7699	8326
	History					7681	9187	7557	7279	7302	7353	6469	7945	7127	7507	6516	6374	6760	7548
	Psychology						8830	7848	8082	7638	8079	7170	8582	7214	7699	5952	6108	7487	7652
	Total							8239	8011	8467	8117	7346	8870	7695	8343	6895	6857	7159	8137
Form II	Narrative								9030	8230	7694	6208	9092	7326	8546	7863	8089	8032	8798
	Literature									8146	7957	6628	9226	7916	8292	7475	7737	8070	8713
	Science										8072	6619	9013	7891	8458	7219	7272	7187	8370
	History											8752	9404	7549	8099	6600	6446	6971	7860
	Psychology												8500	7088	7288	5653	5052	5954	6824
	Total													8337	8983	7684	7627	8001	8954
Form III	Narrative														8556	7300	6707	7126	8688
	Literature															8319	8231	7581	9375
	Science																8589	8000	9202
	History																	7831	9153
	Psychology																		8992
	Total																		

Decimals have been omitted. N = 70

TABLE 15

PRODUCT-MOMENT CORRELATION COEFFICIENTS FOR COMPREHENSION SCORES ON BRAAM-SHELDON FLEXIBILITY OF READING TEST

		Form I						Form II						Form III					
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Form I	Narrative		4136	2113	2119	2858	7211	0569	4203	2278	2902	2593	4146	1491	2999	3862	3236	2730	5134
	Literature			1985	1948	2499	6483	2188	2955	2086	2411	2403	3815	2318	3351	1478	1416	2277	3922
	Science				2455	1331	5422	2971	4554	1027	0025	3953	3676	1208	2150	3034	2985	2218	4024
	History					1042	5190	3510	3002	3218	0852	5025	4643	0761	2294	0262	2709	3215	3046
	Psychology						5615	1434	3371	2209	2364	2581	3844	2703	1746	0728	0748	0803	2394
	Total							3383	5738	3408	2991	5614	6573	2850	4349	3093	3545	3821	6219
Form II	Narrative								2587	1389	1532	3022	5185	1765	2618	1334	3176	0274	3188
	Literature									1314	1308	4061	6059	1877	2530	4935	4801	2355	5980
	Science										5233	2080	6857	1790	3819	-3532	-0414	4001	1666
	History											2021	6970	1252	2507	-0689	0648	1965	1901
	Psychology												6193	2038	2746	1427	3294	2933	4254
	Total													2707	4516	0864	3363	3790	5228
Form III	Narrative														3094	0206	0746	0890	5329
	Literature															-0945	0288	4839	6054
	Science																5629	-0046	5660
	History																	0015	5960
	Psychology																		5040
	Total																		

Decimals have been omitted. N = 63

APPENDIX G

RELIABILITY OF THE ROBINSON-HALL READING TEST OF HISTORY

Pearson product-moment correlation coefficient for the comprehension aspect of the Robinson-Hall Reading Test of History was obtained during the first semester of the 1965-66 school year. The following steps were taken:

1. Population sample was composed of students enrolled in the Freshman English course at Syracuse University.
2. Form 1 was administered during the first week of the semester.
3. Form 2 was administered six weeks later.
4. Only data from students who had taken both forms were used.
5. These data were processed through the Tape Storage and Retrieval program at the university's computing center.
6. A correlation coefficient of .3700 was obtained.

BIBLIOGRAPHY

Anderson, Irving H., and Meredith, Cameron W. "The Reading of Projected Books with Special Reference to Rate and Visual Fatigue," *Journal of Educational Research*, XLI (1948), 453-60.

Barry, Robert B., and Smith Paul E. "An Experiment in Ninth-Grade Reading Improvement," *Journal of Educational Psychology*, XLV, No. 7 (1954), 407-14.

Bear, R. M., and Odbert, H. S. "Experimental Studies of the Relation between Rate of Reading and Speed of Association," *Journal of Psychology*, X (1940), 141-47.

Berman, I. R., and Bird, C. "Sex Differences in Speed of Reading," *Journal of Applied Psychology*, XVII (1933), 221-26.

Betts, Emmett A. "Impact of Adult Reading on Pupil Achievement," *Education*, LXXXII, No. 1 (1961), 29-35.

Bliesmer, Emery P. "1964 Review of Research in College-Adult Reading," *The Philosophical and Sociological Bases of Reading*, Fourteenth Yearbook of the National Reading Conference. Edited by Eric L. Thurston and Lawrence E. Hafner. Milwaukee: The National Reading Conference, Inc., 1965. P. 238.

Braam, Leonard S. "Developing and Measuring Flexibility in Reading," *Reading Teacher*, XVI, No. 4 (January, 1963), 248.

Braam, Leonard S., and Leibert, Robert E. "More Power to You," *Event*. Edited by Eugene T. Johnson. Published by University College of Syracuse University. Vol. V, No. 3 (Spring, 1965), 20-24.

Braam, Leonard S., and Sheldon, William D. *Developing Efficient Reading*. New York: Oxford University Press, 1959.

Buswell, Guy T. "The Relationship between Perceptual and Intellectual Process in Reading," *California Journal of Educational Research*, VII-VIII (1956-57), 99-103.

Campbell, Donald T. and Stanley, Julian C. "Experimental and Quasi-Experimental Designs for Research on Teaching," *Handbook of Research on Teaching*. Edited by N. L. Gage. Chicago: Rand McNally & Company, 1963. Pp. 171-246.

Cason, E. B. *Mechanical Methods for Increasing the Speed of Reading*. Teachers College Contributions to Education, No. 878, 1943, pp. ix-80.

Controlled Reader Study Guide. Huntington, N.Y.: Educational Developmental Laboratories, 1963. Pp. 6, 7.

Cosper, Russell, and Kephart, Newell C. "Retention of Reading Skills," *Journal of Educational Research*, XLIX (November, 1955), 211-16.

Dale, Edgar, and Chall, Jeanne S. "A Formula for Predicting Readability," *Educational Research Bulletin*, XXVII (January 21, 1948) 11-20, 28.

Davis, Frederick B. "Measurement of Improvement in Reading Skill Courses," *Eleventh Yearbook of the National Reading Conference*. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, 1962. Pp. 30-40.

Des Islets, John C. M. "An Investigation of the Use of Accelerated Reading Skills at the USAF Academy Fall 1961-1962," *Speed Reading: Practices and Procedures*, Vol. X. Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware. Edited by Russell G. Stauffer. Newark: University of Delaware Press, 1963.

Dummett, Marty. "An Enthusiastic Approach to Speed and Comprehension," Eleventh Yearbook of the National Reading Conference. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962. Pp. 86-88.

Eller, William. "Evaluation of Reading Films," The Reading Teacher's Reader. Edited by Oscar S. Causey. New York: The Ronald Press, 1958. Pp. 329-32.

Eurich, Alvin C. "The Relation of Speed of Reading to Comprehension," School and Society, XXXII (1930), 404-406.

Fry, Edward. Teaching Faster Reading. Cambridge: University Press, 1963.

Funk, Wilfred, and Lewis, Norman. 30 Days to a More Powerful Vocabulary. New York: Washington Square Press, 1942.

Gilbert, Luther C. "Saccadic Movements as a Factor in Visual Perception in Reading," Journal of Educational Psychology, LV, No. 1 (1959), 15-19.

________. "Speed of Processing Visual Stimuli and its Relation to Reading," Journal of Educational Psychology, LV, No. 1 (1959), 8-14.

Glass, Gerald. "A Study of Certain Selected Variables, Their Relationship to Rate of Reading and the Effect of the Relationships Upon the Improvement in Reading Rate Due to Training." Unpublished Doctoral dissertation, Syracuse University, 1956.

Glock, M. D. "The Effect Upon Eye-Movements and Reading Rate at the College Level of Three Methods of Training," Journal of Educational Psychology, XL (1949), 93-106.

Gowan, J. C., and Scheibel, R. W. "The Improvement of Reading in Gifted Children," Educational Administration and Supervision, XLVI (1960), 35-40.

Greene, E. B. "The Legibility of Typewritten Material," Journal of Applied Psychology, XVII (1933), 713-28.

Harris, Albert J. "Improving Rate of Reading," How to Increase Reading Ability. 4th ed. New York: David McKay Company, Inc., 1961. P. 503.

Heilman, Arthur. "Rapid Reading: Uses and Abuses," Journal of Developmental Reading, V, No. 3 (Spring, 1962), 157-63.

Hermann, Robert. "Is It Speed You Need to Enjoy Reading?" The National Observer, November 23, 1964, p. 21.

Hieronymus, Albert W. "An Analysis of Reading Gains in a College Reading Program." Unpublished Masters thesis, University of Iowa, 1946.

Hill, Walter R. "Influence of Direction Upon the Reading Flexibility of Advanced College Readers," New Concepts in College-Adult Reading, Thirteenth Yearbook of the National Reading Conference. Edited by Eric L. Thurston and Lawrence E. Hafner. Milwaukee: The National Reading Conference, Inc., 1964, pp. 119-25.

Holmes, Jack A. "Gifted Adults Can Learn to Read Faster," California Journal of Educational Research, IV (1953), 103-10.

________. "Speed, Comprehension and Power in Reading," Eleventh Yearbook of the National Reading Conference. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962, pp. 6-14.

Jones, Dan H. "An Experimental Study of Three Methods of Training Industrial Executives in Reading Improvement." Unpublished Doctoral dissertation, Michigan State University, 1954.

Karlin, Robert. "Machines and Reading: a Review of Research," The Clearing House, XXXII, No. 6 (February, 1958), 349-52.

Laycock, F. "Flexibility in Reading Rate and Einstellung," Perceptual and Motor Skills, XIII (1958), 123-29.

Letson, Charles T. "The Construction and Evaluation of a Test to Measure the Flexibility of Reading Rate." Unpublished Doctoral dissertation, Boston University, School of Education, 1956.

________. "The Future of Rapid Reading," Eleventh Yearbook of the National Reading Conference. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962, pp. 57-67.

________. "The Relative Influence of Material and Purpose on Reading Rates," Journal of Educational Research, LII (February, 1959), 238-40.

________. "Speed and Comprehension in Reading," Journal of Educational Research, LII (1958), 49-53.

Lewis, Norman. "An Investigation into Comparable Results Obtained from Two Methods of Increasing Speed Among Adults," College English (December, 1949), pp. 152-56.

Liddle, William. "An Initial Investigation of the Wood Reading Dynamics Method." Unpublished Doctoral dissertation, University of Delaware, 1965.

Lindquist, E. F. "Analysis of Covariance," Design and Analysis of Experiment in Psychology and Education. Boston: Houghton Mifflin Company, 1953.

McDonald, Arthur S. "Reading Flexibility: Its Meaning and Development," Educational Developmental Laboratories Research and Information Reprint No. 9.

McBride, Vearl G. "Adding Speed as You Read," Florida Education, XLII, No. 1 (September, 1964), 14-15.

________. "Rapid Reading--Dr. McBride Responds," Florida Education, XLII, No. 3 (November, 1964), 7, 8.

McNamara, W. J., Paterson, D. G., and Tinker, M. A. "The Influence of Size of Type on Speed of Reading in the Primary Grades," Sight-Saving Review, XXIII (1953), 28-33.

Manolakes, George. "The Effects of Tachistoscopic Training in an Adult Reading Program," Journal of Applied Psychology, XXXVI, No. 6 (December, 1952), 410-12.

Margaretten, Elias J. "Tachistoscopic Training in Industry," American Journal of Optometry, XXIX (1952), 286-92.

Massie, James S. "In-Plant Training for Better Reading," Factory Management and Maintenance, III (March, 1953), 110-12.

Moore, J. E. "Sex Differences in Speed of Reading," Journal of Experimental Education, VIII (1939), 110-14.

________. "Sex Differences in Speed of Reading: A Correction," Journal of Experimental Education, VIII (1939), 245.

________. "A Study of Sex Differences in Speed of Reading," Peabody Journal of Education, XVII (1940), 359-63.

Moore, Walter J. "A Laboratory Study of the Relation of Selected Elements to the Skimming Process in Silent Reading." Unpublished Doctoral dissertation, Syracuse University, 1955.

Mullins, Cecil J. "Reading Improvement Course Aimed to Increase Speed," Personnel Journal, XXXIII (1954), 172-74.

Mullins, Cecil J., and Mowry, Harley W. "How Long Does Reading Improvement Last?" Personnel Journal, XXXII (1954), 416-17.

Nason, Harold M., and McDonald, Arthur S. Reading Flexibility, Reading Newsletter No. 31, Educational Developmental Laboratories, January, 1964.

Nikas, George B. "A Study of Teacher-Oriented versus Machine-Oriented Developmental Reading Classes at the College Level," Journal of Reading, VIII, No. 3 (November, 1965), 214-16.

Olson, Arthur V., Sanford, Slpheus, and Ohnmacht, Fred. "Effectiveness of a Freshman Reading Program," Journal of Reading, VIII, No. 2 (November, 1964), 75-83.

Ong, Jim, Schneider, Kenneth, and Moray, Joseph. "Reading Ability and Perimetric Visual Field," California Journal of Educational Research, XI (1960), 61-67.

"Outline of the Developmental Reading Program," The Artillery School Antiaircraft and Guided Missiles Branch, Department of General Subjects, Fort Bliss, Texas, September, 1952.

Paterson, Donald G., and Tinker, Miles A. "Influence of Leading Upon Readability of Newspaper Type," *Journal of Applied Psychology*, XXXI (1947), 160-63.

________. "Influence of Line Width on Eye Movements," *Journal of Experimental Psychology*, XXVII (1940), 572-77.

________. "Studies of Typographical Factors Influencing Speed of Reading," *Journal of Applied Psychology*, XV (1931), 241-47.

Pauk, Walter. "Speed Reading?" *Journal of the Reading Specialist*, IV, No. 2 (December, 1964), 18-19.

Poulton, E. C. "British Courses for Adults on Effective Reading," *British Journal of Educational Psychology*, XXXI (1961), 128-37.

________. "Time for Reading and Memory," *British Journal of Psychology*, XLIX (1958), 230-45.

Rankin, Earl F., Jr. "The Relationship Between Rate and Comprehension," *Eleventh Yearbook of the National Reading Conference*. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962, pp. 1-5.

________. "Sequential Emphasis Upon Speed and Comprehension in a College Reading Improvement Program," *Journal of Developmental Reading*, VII, No. 1 (Autumn 1963), 46-54.

Robinson, F. B. "An Aid for Improving Rate," *Journal of Educational Research*, XXVII (1934), 453-55.

________. "Speed Versus Comprehension in Reading; a Discussion," *Journal of Educational Psychology*, XXXI (1940), 554-58.

Robinson, F. B., and McCollom, F. H. "Reading Rate and Comprehension Accuracy as Determinants of Reading Test Scores," *Journal of Educational Psychology*, XXV (1934), 154-57.

Robinson, Francis P. Effective Study. New York: Harper and Brothers, 1946.

Robinson, Francis P., and Hall, Prudence. Manual for the Robinson-Hall Reading Tests. Columbus: College of Education, Ohio State University, 1949.

________. "Studies of Higher-Level Reading Abilities," Journal of Educational Psychology, XXXII (April, 1941), 241-52.

Rose, Florence C., and Rostas, Steven M. "Effect of Illumination on Reading Rate and Comprehension of College Students," Journal of Educational Psychology, XXXVII (May, 1946), 279-92.

Schiavone, James. "The Utilization of Mass Media in the Improvement of Adult Reading," Eleventh Yearbook of the National Reading Conference. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962, pp. 77-85.

Sheldon, William D., and Carrillo, Lawrence. "Flexibility of Reading Rate," Journal of Educational Psychology, XLIX (May, 1952), 299-305.

Silvaroli, Nicholas, and Sherk, John Jr. "Does Flexibility Make a Difference?" Unpublished study, Syracuse University, 1962.

Smith, Nila Banton. Faster Reading Made Easy. New York: Popular Library, 1963.

Spache, George D. "Flexibility in Reading," Speed Reading: Practices and Procedures, Vol. X. Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware. Edited by Russell G. Stauffer. Newark: University of Delaware Press, 1963.

________. "Is This a Breakthrough in Reading?" Reading Teacher, XV, No. 4 (January, 1962), 258-63.

________. "Reading Rate Improvement or Success for the Wrong Reasons," Journal of Developmental Reading, VII, No. 1 (Autumn, 1963), 2, 5-6.

Spache, George G., and Berg, Paul C. "So You Think You Can Read Well?" Faster Reading for Business. New York: Thomas Y. Crowell Company, 1958. Pp. 4-5.

Staton, Thomas F. "Preliminary Evidence on Permanency of Reading Rate Increases Following Intensive Training in a Reading Lab," American Psychologist, V (1950), 341-42.

Stauffer, Russell G. "Speed Reading and Versatility," Challenge and Experiment in Reading, VII, International Reading Association Conference Proceedings. Edited by J. Allen Figurel. New York: Scholastic Magazines, 1962. Pp. 206-10.

Stevens, George L., and Orens, Reginald C. "Characteristic Reading Techniques of Rapid Readers," Reading Teacher, XVII, No. 2 (November, 1963), 102-108.

Stone, David R. "Speed of Idea Collecting in University Study-Reading," Journal of Developmental Reading, V, No. 3 (Spring, 1962), 149-56.

Stroud, J. B. "Rate of Visual Perception as a Factor in Rate of Reading," Journal of Educational Psychology, XXXVI (1945), 487-98.

Stroud, J. B., and Henderson, M. "Rate of Reading and Learning by Reading," Journal of Educational Psychology, XXXIV (1943), 193-205.

Sutherland, Jean. "The Relationship Between Perceptual Span and Rate of Reading," *Journal of Educational Psychology*, XXXVII (September, 1946), 373-80.

Sweeney, Francis J. "Intelligence, Vocational Interests and Reading Speed of Senior Boys in Catholic High School of Los Angeles," *California Journal of Educational Research*, V (1954), 159-65.

Tachisto-o-Films Manual. Sunland, Calif.: Learning Through Seeing, Inc., 1965.

Tape Storage and Retrieval System, Preliminary User's Manual. Durham, N.C.: Duke University, January, 1964.

Taylor, Earl A. *Controlled Reading*. Chicago: University of Chicago Press, 1937.

Taylor, Stanford E. "An Evaluation of Forty-One Trainees Who Had Recently Completed the 'Reading Dynamics' Program," *Eleventh Yearbook of the National Reading Conference*. Edited by Emery P. Bliesmer and Ralph C. Staiger. Milwaukee: The National Reading Conference, Inc., 1962, pp. 41-56.

________. "Eye Movements and Reading: Facts and Fallacies," *Reading Newsletter 30* (November, 1963), pp. 1-18.

________. "Speed Reading Versus Improved Reading Efficiency," *Speed Reading: Practices and Procedures*, Vol. X. Proceedings of the Forty-fourth Annual Education Conference at the University of Delaware. Edited by Russell G. Stauffer. Newark: University of Delaware Press, 1963.

Taylor, Stanford E., Frackenpohl, Helen, and Pettee, James L. "A Report of Two Studies of the Validity of Eye-Movement Photography as a Measure of Reading Performance," *Reading in a Changing Society*, Vol. I, International Reading Association Conference Proceedings. New York: Scholastic Magazines, 1959. Pp. 240-45.

Theophemia, Sister M. "Teaching Flexibility in Reading," *Challenge and Experiment in Reading*, VII, International Reading Association Conference Proceedings. Edited by J. Allen Figurel. New York: Scholastic Magazines, 1962.

Thompson, Warren Craig. "A Book-Centered Course Versus a Machine-Centered Course in Adult Reading Improvement," *Journal of Educational Research*, LVIX (February, 1956), 437-45.

Tinker, Miles A. "Cumulative Effect of Marginal Conditions upon Rate of Perception in Reading," *Journal of Applied Psychology*, XXXII (1948), 537-40.

________. "Dr. Robinson on Speed Versus Comprehension in Reading; a Discussion," *Journal of Educational Psychology*, XXXI (1940), 559-60.

________. "Effect of Vibration upon Speed of Perception While Reading Six Point Print," *Journal of Educational Research*, XLVI (1953), 459-64.

________. "Legibility of Type for Adult Books," *Bases for Effective Reading.* Minneapolis: University of Minnesota Press, 1965.

________. "Length of Work Periods in Visual Research," *Journal of Applied Psychology*, XLII (1958), 343-45.

________. "Prolonged Reading Tasks in Visual Research," *Journal of Applied Psychology*, XXXIX (1955), 444-46.

________. "Rate of Work in Reading Performance as Measured in Standardized Tests," *Journal of Educational Psychology*, XXXVI (1945), 217-28.

________. "The Relation of Speed to Comprehension in Reading," *School and Society*, XXXVI (1932), 158-60.

Tinker, M. A., and Paterson, D. G. "Eye Movements in Reading a Modern Type Face and Old English," American Journal of Psychology, LIV (1941), 113-14.

________. "Speed of Reading Nine Point Type in Relation to Line Width and Leading," Journal of Applied Psychology, XXXIII (1949), 81-82.

Thorndike, Robert L. "Check-List and Conclusion," The Concepts of Over- and Underachievement. New York: Teachers College, Columbia University, 1963. Pp. 65-67.

Traxler, Arthur E. "Rapid Reading," Educational Record Bulletin, No. 82 (1962), pp. 74-75.

________. "Sex Differences in Rate of Reading in High School," Journal of Applied Psychology, XIX (1935), 351-52.

Tu, Horace T. C. "The Effects of Different Arrangements of the Chinese Language upon Speed and Comprehension of Silent Reading," Journal of Genetic Psychology, XXXVIII (1930), 321-37.

Van Wagenen, M. J. and Dvorak, August. Manual of Directions for the Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities. Minneapolis: University of Minnesota, 1953.

Walton, Howard N. "Vision and Rapid Reading," American Journal of Optometry, XXXIV (1957), 73-82.

Weber, Christian O. "The Acquisition and Retention of Reading Skills by College Freshmen," Journal of Educational Psychology, XXX (September, 1939), 453-60.

Wedeen, Shirley Ullman. "Mechanical Versus Non-Mechanical Reading Techniques for College Freshmen," *School and Society*, LXXIX (1954), 121-23.

Westover, Frederick. *Controlled Eye Movements Versus Practice Exercises in Reading*. Contributions to Education, No. 917. New York: Teachers College, Columbia University, 1946.

Wood, Evelyn, and Barrows, Marjorie. *Reading Skills*. New York: Holt, Rinehart and Winston, Inc., 1958.

Wooster, George F. "An Experimental Study of the Reading-Rate Controller," *Journal of Educational Psychology*, XLV, No. 7 (November, 1954), 421-26.

Zaccaria, Attilio, Jr., and Bitterman, M. E. "Effect of Fluorescent Flicker on Visual Efficiency," *Journal of Applied Psychology*, XXXVI, No. 6 (December, 1952), 413-16.

BIOGRAPHICAL DATA

Name: Allen Berger

Date and Place of Birth: June 13, 1936
Utica, New York

Elementary School: Kemble School
Utica, New York
Graduated 1950

High School: Utica Free Academy
Utica, New York
Graduated 1953

College: Utica College of Syracuse University
Utica, New York
B. A. 1957

Graduate Work: New York State College for Teachers
Albany, New York
M. A. 1960

Syracuse University
Syracuse, New York
Teaching Fellow
1964-1966

JUL 11 1966

A Summary of

Title: EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY

Investigator: Allen Berger

Institution: Syracuse University
Syracuse, New York

Project Number: Cooperative Research Project
No. OEC-1-6-068187-0845

Duration: March 1, 1966 to June 30, 1966

BACKGROUND

The need to increase reading rate may be discerned not only by popular interest in such programs but also from observations made by various educators. These educators have also directed attention to the need for increased reading flexibility and reading comprehension. Various methods which claim to increase reading rate, comprehension, and flexibility are now available to the public and to the schools. Studies that have attempted to evaluate the results or effectiveness of these reading improvement methods have fallen short. This study was designed to determine the effectiveness of four methods[1] to increase reading rate, comprehension, and flexibility, with a major purpose being the determination of gains made and the retention of these gains. The study is also designed to determine differences in gains and the retention of these differences.

OBJECTIVES

In this study, thirteen hypotheses were tested:

1. No gains in reading rate will result from any of four different methods of instruction.
2. No gains in reading comprehension will result from any of four different methods of instruction.
3. No gains in reading flexibility will result from any of four different methods of instruction.

---

[1] The methods are referred to as tachistoscopic, controlled reader, controlled pacer, and paperback scanning. For a description of these methods, see pp. 5-8 of this report.

4. There will be no retention of gains in reading rate resulting from any of four different methods of instruction.

5. There will be no retention of gains in reading comprehension resulting from any of four different methods of instruction.

6. There will be no retention of reading flexibility resulting from any of four different methods of instruction.

7. There will be no differences in gains in reading rate resulting from different methods of instruction.

8. There will be no differences in gains in reading comprehension resulting from different methods of instruction.

9. There will be no differences in gains in reading flexibility resulting from different methods of instruction.

10. There will be no differences in retention of gains in reading rate resulting from different methods of instruction.

11. There will be no differences in retention of gains in reading comprehension resulting from different methods of instruction.

12. There will be no differences in retention of gains in reading flexibility resulting from different methods of instruction.

13. Different methods of instruction will result in no differences in the rates with which short and long passages are read.

In addition, analyses were made of the effect of the variables of verbal and math aptitude and sex.

PROCEDURE

This study, conducted during the first semester of the 1965-1966 school year, is based upon findings and considerations arising from a pilot study conducted the previous semester. Involved in both studies were freshman students enrolled in Improvement of Learning, a one-semester two-credit hour reading-study skills courses at Syracuse University. Instruction in this course focuses on improvement of reading rate and comprehension, vocabulary and study skills.

Twelve sections of the Improvement of Learning course at Syracuse University were involved in the major investigation. Nine sections meet for one 50-minute session three mornings a week; three sections meet for extended sessions two afternoons a week. Total classroom time is 150 minutes a week. Although the course is open to all who wish to enroll, the majority of students are freshmen. Those whose College Board verbal scores are below 500 are recommended for enrollment. Only full matriculated freshmen were considered in the investigation. For the control group, two instructors from the university's English Department contributed five sections in response to a request for volunteers from the director of Freshman English.

The College Board scores were comparable among the treatment groups, the range being 483 to 493 for the verbal and 555 to 580 for the math. The initial reading rates were also relatively comparable among the treatment groups, as indicated by the measuring instruments. A total of 255 students were in the investigation.

The number of sessions required for each major aspect of this investigation is presented:

Major Aspects	Number of Sessions
Orientation to Course	1
Pre-Testing	3
Training Sessions	17
Post-Testing	2
Post-Post-Testing	2
	25

Lesson plans for these 25 sessions may be found in Appendix B of the final report.

Methods

Treatment methods were randomly assigned to the sections. Three sections were instructed through the Tachistoscope, 3 through the Controlled Reader, 3 through the Controlled Pacing, and 3 through the Paperback Scanning method.

Each method took approximately 30 minutes each session. For the remaining time in all sections under all methods, students read paperbacks with the encouragement to apply their newly acquired skills. The paperbacks used for this transfer reading were not the same titles used for training in the Paperback Scanning method.

On the first session each week during the time normally allotted for transfer reading, a quiz was given to all sections on specified chapters in a vocabulary text.

With all methods, the intent was to present the programs following as closely as possible the recommendations made by the publishers.

Following is a description of each of the four methods:

Method A--Tachistoscope.--Essentially, each lesson involved the use of Classroom Kit VII (RK-7) published by Learning Through Seeing, Inc. The kit contains four types of filmstrips: Seeing Skills, Word Mastery, Phrase Mastery, and Reading Development. Material on the film strips is flashed at $\frac{1}{40}$ second, and two strips were viewed each session. As an illustration, during the first training session, the students viewed the first filmstrip from Seeing Skills and the first filmstrip from Word Mastery. The Seeing Skills strip includes forms and numbers which the students record and then check for accuracy. The Word Mastery strip contains words, flashed, recorded, and then checked. The students recorded their words in notebooks. The publisher claims that reading rate and comprehension will be increased through the use of the material.[1]

---

[1] Tachist-O-Films Manual (Sunland, Calif.: Learning Through Seeing, Inc., 1965), pp. 1, 2.

Method B--Controlled Reader. The instruction closely followed the recommendations made by the publisher, Educational Developmental Laboratories. Each day's lesson involved building a readiness for the filmstrip to be viewed, discussion of the vocabulary, viewing the strip, and then checking comprehension through multiple choice questions. To correspond to the readability level of the material used in the other methods, Set IJ was used. Each student used an EDL-Study Guide, which corresponded to the filmstrips in Set IJ, so that the program might be followed exactly as recommended. On each training session, the filmstrip was viewed at approximately 30 words faster than the strip on the preceding session. The first filmstrip was viewed at 150 words a minute and, on the seventeenth and final session, the students viewed a filmstrip at 540 words a minute.

During the last six sessions, the speed of the filmstrips combined with the reading rate attained by the students made it necessary to group students. Two groups were formed in each section and the filmstrip was viewed twice by each group--once at a speed 30 words a minute faster than the strip on the preceding session for the faster group. In addition, during the remaining six training sessions, on the recommendation of the publisher, this method incorporated the practice of viewing the last session's filmstrip at the last session's speed before beginning the lesson using the new filmstrip. The publisher claims that reading rate, comprehension, and flexibility (referred to by the publisher as variability) will be increased through the use of the material.[1]

Method C--Controlled Pacing. The only difference between this method and Method B was that the reading matter on the filmstrips used in Method B was in this method presented on paper, with the same number of words per line as on the filmstrips. To substitute for the left-to-right visual pacing of the machine, students moved 3 × 5 cards containing slots large enough to reveal half a line, along each line and down the page, to the pacing of a metronome, which was synchronized to the steady click made by the Controlled Reader. As in Method B, there was an introduction of the material about to be read, a discussion of the vocabulary followed by the reading of the passage and the comprehension check.

During the last sessions, groups were formed as needed. During these last sessions, to remain as close as possible to Method B, the practice was incorporated of reading the last session's reading at the last session's speed before beginning the lesson using the new reading. Each student used an EDL-Study Guide.

Method D--Paperback Scanning. In this method, the reader is required to scan each page under time pressure. For the first two minutes of this exercise, the student was allowed 8 seconds a page; for the next two minutes, 7 seconds a page and on down to

---

[1] Controlled Reader Study Guide (Huntington, N. Y.: Educational Developmental Laboratories, 1963), pp. 6, 7.

2 seconds a page and then immediately up to 10 seconds a page. A metronome was used to click each second, with the instructor indicating the start of a new page, thereby insuring controlled pacing of the material.

Primary objective of this exercise is to accustom the eyes to move vertically. Paperbacks were selected with a particular consideration to a comparable readability level as determined by the Dale-Chall Formula to the material used in the other methods; in addition, consideration was given to type size and line length. To correspond to the other methods, 10-item quizzes based on the paperbacks were prepared. The method, which basically involves a five-minute pre-test, the countdown exercise described above, and then a post-test, requires approximately 30 minutes, like the other methods.

Control

Instructors of the control sections gave students standard instruction in Freshman English. To counterbalance the Hawthorne Effect, the control sections were told that they were part of the experiment. A brief statement was read to each treatment group at the first meeting which explained that all sections would cover similar material but through different methods.

The following measuring instruments were selected:

1. The Van Wagenen Rate of Comprehension Test (Forms D, C, and B). Testing Time: 4 minutes. The test is composed of 30-word

passages; in each passage there is an incongruous word, which the student must cross out. This is almost a sheer rate of reading test, since the level of comprehension is such that the reader should attain 100 percent. Reliability is reported between .86 and .96, with a 15-word error of measurement.

2. The Robinson-Hall Reading Test of History (Forms Canada and Russia). Testing Time: approximately 20 minutes--10 minutes to read and about 10 minutes to answer questions. The test is approximately 3,000 words in length. The student notes where he is at the end of 10 minutes or, if finished earlier, notes the time that elapsed, and begins responding to test items, nearly all multiple choice. The reliability is reported as .91 for reading rate.

3. The Braam-Sheldon Flexibility of Reading Test (Forms 1, 2, and 3). Testing Time: approximately 40 minutes. The test is composed of five passages selected from different areas (e.g., narrative, literature, science, history, and psychology). The student is required to respond to ten multiple choice items following each passage. The present investigator obtained an over-all rate reliability of .89 between the first and second forms and .90 between the second and third forms.

From these three measuring instruments, the following data were obtained:

a. Initial reading rate and comprehension level
b. Final reading rate and comprehension level

c. Retention of gains in reading rate and comprehension level

d. Initial reading flexibility and comprehension level

e. Final reading flexibility and comprehension level

f. Retention of gains in reading flexibility and comprehension level.

In addition, Syracuse University Freshman Test Profile Cards provided the following data:

g. College Entrance Examination Board Scholastic Aptitude Test--verbal and math scores

General Design

The design used for this investigation was the Non-Equivalent Control Group Design.[1] It was selected because it most closely fit the experimental situation. It was not possible to randomize either students or instructors; the treatment variable, however, for each section was randomly selected.

Statistical Analyses

To compensate for any possible initial differences between groups, the major statistical method used to analyze the data was the analysis of covariance. Attention was given to the variables of verbal and math aptitude and sex. In addition, after significant F values were found, the *t*-test was applied to all possible combinations of group means. The *t*-test was also used to determine any significant differences in the level of comprehension scores. The Pearson product-moment coefficient of correlation was used to obtain a correlation matrix and to test reliabilities.

---

[1] This particular design is discussed in detail in *Handbook of Research on Teaching*, ed. N. L. Gage (Chicago: Rand McNally & Company, 1963). See chapter by Donald T. Campbell and Julian C. Stanley, "Experimental and Quasi-Experimental Designs for Research on Teaching," pp. 171-246.

RESULTS

The major purpose of this study was to test thirteen hypotheses related to reading effectiveness. These hypotheses were built on a hierarchical structure which required the rejection of prior hypotheses in order to test related hypotheses. For example, because there were no gains in reading comprehension, it was not possible to test retention of gains in reading comprehension. Four of the thirteen hypotheses proved to be untestable for this reason.

Following are the hypotheses and results:

1. No gains in reading rate will result from any of four different methods of instruction.
   This hypothesis was rejected.
2. No gains in reading comprehension will result from any of four different methods of instruction.
   This hypothesis was accepted.
3. No gains in reading flexibility will result from any of four different methods of instruction.
   This hypothesis was rejected.
4. There will be no retention of gains in reading rate resulting from any of four different methods of instruction.
   This hypothesis was rejected.

5. There will be no retention of gains in reading comprehension resulting from any of four different methods of instruction.
   Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_5 cannot be tested.

6. There will be no retention of gains in reading flexibility resulting from any of four different methods of instruction.
   This hypothesis was rejected.

7. There will be no differences in gains in reading rate resulting from different methods of instruction.
   This hypothesis was rejected.

8. There will be no differences in gains in reading comprehension resulting from different methods of instruction.
   Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_8 cannot be tested.

9. There will be no differences in gains in reading flexibility resulting from different methods of instruction.
   This hypothesis was accepted.

10. There will be no differences in retention of gains in reading rate resulting from different methods of instruction.
    This hypothesis was rejected.

11. There will be no differences in retention of gains in reading comprehension resulting from different methods of instruction.
    Since this hypothesis is contingent upon the rejection of H_2, which was accepted, H_{11} cannot be tested.

12. There will be no differences in retention of gains in reading flexibility resulting from different methods of instruction.
    Since this hypothesis is contingent upon the rejection of H_9, which was accepted, H_{12} cannot be tested.

13. Different methods of instruction will result in no differences in the rates with which short and long passages are read.
    This hypothesis was rejected.

CONCLUSIONS

Following are conclusions and implications:

1. The first hypothesis, which stated that no gains in reading rate would result from any of four different methods of instruction, was rejected. Significant gains in rate were made as a result of all methods of two measuring instruments.

Implications for designing a program of reading and study skill development may be derived from this finding Since students seem to like the idea of increasing their reading rate, it may be psychologically advantageous to begin a program with emphasis on this particular skill. Nearly all students can see a marked increase in a relatively short time. The development of an increased reading rate allows an entrance into other areas, such as study skills. For example, to use any of the reading-study skills formulae, students must be able to skim. From this point, the instructor may move into a variety of areas, depending upon student need.

2. The second hypothesis, which stated that no gains in reading comprehension would result from any of four different methods of instruction, was accepted. This finding appears to refute the widely held belief that increased reading rate results in decreased reading comprehension. However, it must be noted that the tests in this study were designed to measure comprehension of details primarily; therefore, it cannot be assumed that increases in rate of reading will have no effect on other kinds of comprehension.

3. The third hypothesis, which stated that no gains in reading flexibility would result from any of four different methods of instruction, was rejected. The gain in flexibility was anticipated, for the more rapidly the student is able to read, the greater is his potential for flexibility. The reader who can skim some materials at 1,000 words a minute may read other materials at 200 words a minute, whereas the reader whose top rate is 250 words a minute has a limited range.

Support for the view that the more rapidly the student is able to read the greater his potential for flexibility comes from the findings of gains in rate made through the four treatment methods. Although all four methods produced significant gains in rate, the smallest amount of gain was produced by the tachistoscopic method, as indicated by both instruments measuring rate. The finding that the tachistoscopic method produced the smallest amount of gain in rate may account for the fact that the tachistoscopic group made no significant gains in flexibility at the .01 level of confidence, although at a less conservative level gains may be observed.

4. The fourth hypothesis, which stated that there would be no retention of gains in reading rate resulting from any of four different methods of instruction, was rejected. Although gains in rate were retained by all the experimental groups, one must recognize that eight weeks is a relatively short interval. Moreover, during this interval the experimental groups continued in the Improvement of Learning course. Even though reading and study skills other than rate are emphasized in this course, it may be assumed that this instruction and practice were supportive of maintenance of gains.

5. The fifth hypothesis, which stated that there would be no retention of gains in reading comprehension resulting from any of four different methods of instruction, was untestable, since no gains in comprehension were made.

6. The sixth hypothesis, which stated that there would be no retention of gains in reading flexibility resulting from any of four different methods of instruction, was rejected Like the finding of the fourth hypothesis, this finding is encouraging, bearing in mind the limitations of the relatively short interval and the fact that the experimental groups continued in the course.

7. The seventh hypothesis, which stated that there would be no differences in gains in reading rate resulting from different methods of instruction, was rejected. In thirteen comparisons of mean scores on two measuring instruments, significant differences at the .01 level of confidence were found favoring the paperback scanning method. This finding, however, should not imply ruling out the use of the other methods considered, for certain individuals may learn better through one or a combination of them. In addition, it must be borne in mind that the methods considered are group pacing methods, and there may be individuals who would profit more from individual pacing methods.

8. The eighth hypothesis, which states that there would be no differences in gains in reading comprehension resulting from different methods of instruction, was untestable, since it was contingent on the rejection of a prior hypothesis, which was accepted.

9. The ninth hypothesis, which stated that there would be no differences in gains in reading flexibility resulting from different methods of instruction, was accepted. No method produced significantly superior results in reading flexibility at the .01 level of confidence.

10. The tenth hypothesis, which stated that there would be no differences in retention of gains in reading rate resulting from different methods of instruction, was rejected. It is

interesting to observe that, although all changes remained within the measuring instrument's 15-word error of measurement, the control group was the only group showing a loss, while the treatment groups all showed gains.

11. The eleventh hypothesis, which stated that there would be no differences in retention of gains in reading comprehension resulting from different methods of instruction, was untestable, since no gains were made in reading comprehension.

12. The twelfth hypothesis, which stated that there would be no differences in retention of gains in reading flexibility resulting from different methods of instruction, was also untestable, since no differences were found in reading flexibility.

13. The thirteenth hypothesis, which stated that different methods of instruction would result in no differences in the rate with which short and long passages are read, was rejected. A reason for including this hypothesis was to obviate the possibility of a particular method having the effect of teaching for the testing instrument. This hypothesis was also included to determine if one method might produce significantly superior results in both short and long passages. The paperback scanning method appeared to be significantly superior over all other methods on the two different types of measuring instruments.

The fact that the paperback scanning method produced the most significant results over the other methods has additional educational implications. Of all the methods, the paperback scanning method allows for the greatest amount of reading. The training material is or can be more closely related to material read normally. The cost of the paperback scanning method is far less than the other methods. Virtually no upkeep is required; teachers need not concern themselves with the possibility of burned-out bulbs or short circuits. Costs of replacing 30 copies each of six titles should amount to approximately $100 every two or three years.

In addition, one of the indices of good teaching is that the students should be far more different from one another at the end of instruction than at the beginning of instruction; the paperback scanning method produced a dispersion, as indicated by the standard deviation on a post test instrument measuring rate, that was approximately three times greater than that produced by the Controlled Reader method.

The work of teachers interested in increasing the reading effectiveness of their students may be coordinated through a reading specialist, who might conduct a program to familiarize reading teachers with the methods considered in this study and with the latest research on increasing rate, comprehension, and flexibility. A peripheral benefit of such a program would be a greater understanding of claims made by commercial reading programs.

BIBLIOGRAPHY

There are 125 references listed in the final report.